



International Union of Forest Research Organizations  
Union Internationale des Instituts de Recherches Forestières  
Internationaler Verband Forstlicher Forschungsanstalten  
Unión Internacional de Organizaciones de Investigación Forestal

## **IUFRO World Series Vol. 19**

---

# **Global Forest Decimal Classification (GFDC)**

# **Globale Forstliche Dezimal- Klassifikation (GFDK)**

**Editors:**

Barbara Holder  
Jarmo Saarikko  
Daryoush Voshmgir

Prepared by IUFRO Working Party 6.03.03  
Global Forest Decimal Classification

---

ISSN 1016-3263  
ISBN 3-901347-61-5  
IUFRO, Vienna 2006

**Recommended catalogue entry:**

Holder, B., Saarikko, J. and Voshmgir, D. 2006.  
Global Forest Decimal Classification (GFDC). IUFRO World Series Vol. 19. Vienna. 338 p.

Classification: GFDC: 0--014, UDC: 025.45



**Forintek  
Canada  
Corp.**

**METLA**

**Published by:**

IUFRO Headquarters, Vienna, Austria, 2006  
© 2006 IUFRO

IUFRO Headquarters  
c/o Mariabrunn (BFW)  
Hauptstrasse 7, A-1140 Vienna, Austria  
Tel.: +43-1-877 01 51-0; Fax: +43-1-877 01 51 -50  
E-Mail: office@iufro.org; Internet: www.iufro.org

**Available from:**

IUFRO Headquarters (see above), and  
Library  
Austria Federal Research and Training Centre for Forests, Natural Hazards  
and Landscape. Unit: Documentation, Publication & Library,  
Seckendorff-Gudent-Weg 8, A-1131 Vienna, Austria  
Tel.: +43-1-87838-1216; Fax: +43-1-87838-1215  
E-Mail: gudrun.csikos@bfw.gv.at; Web: <http://bfw.ac.at/>

ISBN 3-901347-61-5

**Price 35 Euro plus mailing costs**

**Printed by:**

Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (**BFW**)

GFDC website: <http://iufro.andornot.com/GFDCDefault.aspx>

## Editors

Barbara Holder - Forintek Canada - holder@van.forintek.ca

Jarmo Saarikko - Metla - jarmo.saarikko@metla.fi

Daryoush Voshmgir - BFW - daryoush.voshmgir@bfw.gv.at

## Steering group

Barbara Holder - Forintek Canada

Roger Mills - Plant Sciences Library, Oxford University Library Services

Gillian Petrokofsky - CAB International

Renate Prüller - IUFRO

Alan Reid - MAF Policy, New Zealand

Jarmo Saarikko - Finnish Forest Research Institute, Metla

Daryoush Voshmgir - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

## Expert contributors

James Brooks - CAB International

Reinhard Fromm - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Oscar Fugalli - Food and Agriculture Organization

Alfred Fürst - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Berthold Heinze - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Peter Höller - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Carolus Holzschuh - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Alois Kempf - Swiss Federal Institute for Forest, Snow, and Landscape Research (WSL)

Ferdinand Kristöfel - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Roland Luzian - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Markus Neuman - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Frank Perzl - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Lambert Rammer - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Jarmo Saarikko - Finnish Forest Research Institute, Metla

Rudolf Sailer - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Heinrich Schmutzenhofer - IUFRO

Stefan Smidt - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Daryoush Voshmgir - Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)



**Institutional Contributors**

Andornot Consulting (Vancouver, B.C., Canada)

Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

CAB International

Finnish Forest Research Institute, Metla

Forintek Canada

Plant Sciences Library, Oxford University Library Services

UDC Consortium (The Hague)

**Editorial Contributors**

Bridget Biggs, CAB International

**German Translations**

Margarete Khorchidi, Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

Renate Prüller, IUFRO Headquarters Vienna

Daryoush Voshmgir, Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

**Layout**

Johanna Kohl, Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW)

**Database Design**

Kathy Bryce, Principal, Andornot Consulting

# Contents

|   |     |
|---|-----|
| <b>Introduction</b> .....   | I/1 |
| History .....   | I/1 |
| Background to this edition.....                                     | I/1 |
| History of the Decimal Classification (from the 1953 edition) ..... | I/3 |
| Introducton to the classification.....                              | I/5 |

## **Global Forest Decimal Classification Schedules**

|   |      |
|---|------|
| 0 Forests, forestry and the utilization of forest products .....  | I/15 |
| 1 Factors of the environment. Biology .....   | I/15 |
| 2 Silviculture.....   | I/27 |
| 3 Work Science (work studies). Harvesting of wood: logging and transport.<br>Forest engineering .....               | I/35 |
| 4 Forest injuries and protection.....   | I/41 |
| 5 Forest mensuration. Increment; Development and structure of stands.<br>Surveying and mapping .....                | I/47 |
| 6 Forest management. Business economics of forestry.<br>Administration and Organization of Forest enterprises ..... | I/53 |
| 7 Marketing of forest products.<br>Economics of forest transport and the wood industries .....                      | I/59 |
| 8 Forest products and their utilization.....  | I/63 |
| 9 Forests and forestry from the national point of view.<br>Social economics of forestry .....                       | I/77 |

## **Auxiliaries**

|  |       |
|--|-------|
| Appendix A Subject auxiliaries .....   | I/81  |
| Appendix B Auxiliaries of form and place<br>(reproduced with kind permission of the UDC Consortium)..... | I/87  |
| Appendix C Selection of insects with special interest to forest science .....                            | I/101 |
| Appendix D Selection of trees of special interest to European and<br>North American forestry .....       | I/117 |

|                                   |       |
|-----------------------------------|-------|
| <b>Alphabetical indexes</b> ..... | I/121 |
| Topical subject index .....       | I/123 |
| Geographic index.....             | I/167 |



# In memory of Oscar Fugalli

## A Special Farewell to Special Oscar (from IUFRO News no. 10)

“Sadly, we announce that **Oscar Fugalli** died on Saturday, 15 October 2005 in Rome. Those who had the privilege to work with him will always remember him as a dedicated forester, generous mentor and special person. To give an appreciation of his outstanding personality to all who did not have the opportunity to know him personally, we would like to share our memories of him:

Oscar Fugalli was special in many ways to IUFRO and the staff at IUFRO Headquarters. During his work at FAO, he developed a global perspective on forestry, established personal friendships with forestry leaders in many countries, and especially came to a deep understanding of the forester’s problems in developing countries.

These work experiences and his ability to relate effectively and affably with foresters and scientists at all levels in all parts of the world eminently qualified him to be selected as the first Coordinator of the IUFRO Special Program for Developing Countries (SPDC) in 1983. As Coordinator of SPDC, he conceived and brought to fruition many activities - workshops, training courses, the ‘SPDC Information Bulletin for Developing Countries’ - that benefited forestry research managers and scientists in developing countries. With his activities he laid the basis for subsequent projects of SPDC in Africa, Asia and Latin America.

Following his retirement as SPDC Coordinator in 1990, he continued to volunteer services to SPDC and IUFRO in Vienna and Rome. With his rich experience he would comment upon IUFRO’s activities with indulgence and foresight. Among many anecdotes, we remember his affection for a little black typewriter that he would not remove from his office although he ably manipulated computers and email services.

Oscar was modest and untiring in his work but even during the busiest time his warmth and sense of humor came through. He was extremely talented in playing with words and it was a delight to listen to him. For the reception of his Honorary Membership in 1995 he conveyed the following message: ‘More than honored I am “everwhelmed”. But if I confront myself with the Honorary Members of the past .... I cannot help feeling like a pygmy. But I may still have time to grow!’

*To Oscar with wishes from the tribe.”*

Oscar made a huge contribution to this edition of the classification, contributing almost 100 suggestions for additions and extensions (clarifications).





# Introduction

## History

The Global Forest Decimal Classification (GFDC) is a “tool for organizing and retrieving electronic and paper format forestry related information resources”.

First conceived in 1903, the “Flury” version of the forestry classification was adopted by the International Union of Forest Research Organizations (IUFRO) in 1933, updated and published in English by the Commonwealth Agriculture Bureaux (now CABI) in 1954, and updated and published by IUFRO in German in 1992. A trilingual short version (English - French - German) was published in 1990.

The Universal Decimal Classification (UDC) is used in parallel with GFDC to cover non-forestry topics. Similarly, GFDC is used with UDC to provide in-depth coverage for forestry topics - so the classifications have a historic symbiotic relationship.

This edition was prepared by the Global Forest Decimal Classification unit of IUFRO (6.03.03) over a period of three years using collaborative web technology to bring together members from Europe, North America and Australasia. The unit has initiated a database that produced this edition and will provide a future Master Reference File for future updates.

The success of the initiative is a tribute to the spirit of collaboration and professionalism found among IUFRO members and supporters.

## Background to this edition

IUFRO aims to encourage “more efficient use of resources by forest research at regional and global levels” and attempts to ensure “scientists and others have access to the best available information”. In 2002 an international group of forestry information professionals, working as part of IUFRO’s Division 6, Social, Economic, Information and Policy Sciences, formed a steering committee to revitalize and update the classification to reflect current reality in our discipline.

The steering group went through a planning exercise to set up values and goals. One of the steering group’s values is to use web technology to overcome distance. Microsoft Livemeeting (a web-conferencing tool) proved an effective means of holding “virtual” meetings with participants from Canada, England, Austria, Switzerland and Finland.

Goals for 2003-2005 were:

- Create and foster a dynamic community of contributing stakeholders
- Update the classification with assistance from forest researchers worldwide
- Publish updated versions in paper and electronic formats
- Work in parallel with allied IUFRO and non-IUFRO groups.

To ensure that the initiative made sense the steering group initiated a survey of classifications used for forestry collections worldwide. The survey showed that ODC/FDK were still widely used, with stakeholders welcoming the updating effort.

Volunteers set up a database to manage the updating effort, using Inmagic software and modelling the database structure on UDC’s Master Reference File, with additional fields to accommodate the English 1954 edition and the German 1992 edition of the forestry classification. The 1954 edition of the classification was scanned, checked by a professional editor and uploaded into the database. The German edition was uploaded from its original electronic file.

A database consultant (Andornot Consulting of Vancouver, British Columbia) developed web-based forms to allow input of suggested changes to the database from anywhere in the World, and generously hosted the database on their server free of charge. The editorial committee displayed suggested changes with the original structure to facilitate discussion and decision-making.

The GFDC database is part of a toolkit for volunteer contributors. The toolkit includes:

- A statement of our mission, vision, values and goals
- A roadmap for the consultation process
- The GFDC classification database
- The scanned 1954 edition of the classification in pdf format
- The 1990 German edition in pdf format
- GFDC schedules with proposed amendments in pdf format
- A password protected area for viewing the UDC Master Reference File database
- A link to a discussion area in GoogleGroups.

One of the steering group's stated goals is to "work in parallel with allied IUFRO and non-IUFRO groups". With this in mind we invite IUFRO groups to participate in the continued updating of the classification. We also approached the UDC Consortium to revive and consolidate our historic cooperation and received generous encouragement, advice and support, including free associate membership of the Consortium.

The current reality is that with web technology and printing on demand it is practical to update the classification schedules on a rolling annual basis so we are happy to receive new suggestions via the website, or by any other method of communication.

We are proud to publish this revised edition of the Global Forest Decimal Classification with generous financial support from Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW).

## History of the Decimal Classification (from the 1953 edition)

The International Association of Forest Research Institutes - in 1929 renamed the International Union of Forestry Research Organizations (IUFRO) - put the creation of a universal classification system and an international forest bibliography on its programme as early as 1903. This task was entrusted to the Bibliographical Committee.

The work was conducted under the chairmanship of Prof. A. Bühler (Tübingen), Prof. A. Opperman (Copenhagen), and Prof. R. S. Troup (Oxford), and in 1933 the Committee presented a complete classification for forest literature which was adopted in Congress. The 'Forest Bibliography' came to be widely known as the Flury System, because most of the creative work had been done by the Swiss forester Dr. Philipp Flury. Its main purpose was to promote the regular exchange of internationally important references between the member countries of IUFRO. The System was assigned the decimal signature 634.9F to distinguish it from the head 634.9 Forestry in the Universal Decimal Classification (UDC), which differs in the details of its subdivision.

Meanwhile, the rapid developments in forest research necessitated a revision almost at once. At a meeting in Zurich in 1948 under the chairmanship of Prof. H. Burger, F.C. Ford Robertson, Director of the Commonwealth Forestry Bureau (CFB), Oxford, presented a completely revised system which had been prepared by his Bureau with the Research Station of the U.K. Forestry Commission (Alice Holt) and the Forest Products Research Laboratory of the Department of Scientific and Industrial Research (Princes Risborough). Much of the credit for this new, creative work belongs to P. G. Beak, then Assistant Director of the CFB.

Later on, the International Council of IUFRO proposed to the FAO that they appoint a joint bibliographical committee to study the new classification and make appropriate recommendations, the IUFRO representatives being A. Oudin, Director of the Ecole Nationale des Eaux et Forêts, Nancy; F.C. Ford Robertson, Director of the Commonwealth Forestry Bureau, Oxford; and E. Saari, Professor of Forest Economics, University of Helsinki. The FAO welcomed the suggestion, and appointed J.D.B. Harrison and R.G. Fontaine as its representatives. J.D.B. Harrison was subsequently succeeded by I. T. Haig and R.G. Fontaine by E. Moerath. From time to time, various other specialists were brought in for consultation, as shown below. This Joint FAO/IUFRO Committee on Forest Bibliography, which superseded the former Bibliographical Committee as Section 01 of the newly organized IUFRO Research Sections, held its first meeting in Helsinki in 1949 under the chairmanship of J.D.B. Harrison. Subsequent meetings, under the chairmanship of E. Saari were held as follows:

| <b>Date</b>          | <b>Place</b> | <b>Consultants</b>                                     |
|----------------------|--------------|--|
| 30 Jan.-4 Feb. 1950  | Oxford       | Beak, Kitchingman, Laurie, McCracken, Varossieau       |
| 5-8 Jun. 1950        | The Hague    | Beak, Donker Duyvis, Van Heurn, Van Vloten, Varossieau |
| 30 Aug.-4 Sept. 1951 | Wageningen   | None   |
| 8-10 Jun. 1953       | Oxford       | Beak, Hilf   |
| 18-25 Sept. 1953     | Rome         | Abetz, Beak, Hilf, Holmstrom, Varossieau               |

The new classification was carefully examined at these and other special meetings and at the same time circulated for criticism among IUFRO members and other forestry research bodies. The classification of Forest Economics in the broadest sense heads 6, 7, and 9 was completely reorganized according to proposals from Saari, Abetz, and Mantel, while heads 30, 35, and 36 were also entirely revised according to proposals submitted by the FAO Pilot Committee on Logging Techniques, and collated by Hilf (Reinbeck-Hamburg) and Gläser (Hann. Münden). Further, the Committee had established early contact with the International Federation of Documentation (FID) with a view to incorporating the new system into the UDC.

The definitive English text of the new system - the Oxford System of Decimal Classification for Forestry, was finally presented to the IUFRO Congress in Rome in September 1953, and unanimously adopted with the following recommendations:

1. In view of the high importance to forestry science of using a single up-to-date system of classification, the Congress urges all its members to adopt the Oxford System of Decimal Classification for Forestry to the level of subdivisions that they require and also to conform to such authorized applications and developments of system as may from time to time be prescribed.

2. The original text of the Oxford System being English, it is desirable that authorized translations be published in at least French, German and Spanish.

Two months later the Conference of FAO, at its 7th Session in Rome, approved the System through the following resolution:

## **THE CONFERENCE-**

Notes with satisfaction the completion by the Joint FAO/IUFRO Committee on Bibliography of a definitive English text of the Oxford System of Decimal Classification for Forestry, shortly to be published.

Notes, also, that translations into the official languages of both FAO and IUFRO are in hand. Commends this system of classification for adoption by forest libraries, institutes and documentation centers in member countries.

Requests the Joint FAO/IUFRO Committee on Bibliography to review from time to time the classification as now established and to formulate recommendations for the application and development of the Oxford System, as may appear desirable.

by Eino Saari, Helsinki, 1953;

revised by Regina Schenker and Margaret Joyce Sieber, Zurich, 1989.

## **The Classification from 1954 to 1990**

In the 1980's the forestry classification was out of date. It had not been updated for more than 10 years, although progress in forestry research was enormous in those 10 years.

Consequently, foresters readily believed that the Oxford System (ODC) was antiquated and no longer useful, particularly for computer applications. The users of the card catalogues at the Commonwealth Forestry Bureau in Oxford were in favour of changing the system. S. Schrader's article in *Forstarchiv*, 50, 1979, 3: 51-53 then caused a complete change in the documentation situation. The few large documentation centres would use a different classification language than the many small libraries.

However, at a meeting of IUFRO Subject Group 6.03 in Hamburg in 1979, forestry librarians from England, Finland, France, Yugoslavia, Austria, the Federal Republic of Germany, and Switzerland refused to abandon the system. Most of the libraries concerned were established over 100 years ago, and the adoption of a new system would have complicated their work needlessly.

So it was in 1979 that the forest classification reached another turning point, as it had in 1953. In 1980, with the agreement of Prof. Lars Strand, Leader of Division 6, and O.N. Blatchford, first leader of our group, an ad hoc Working Party undertook a worldwide survey of the use of the ODC. This survey showed clearly its importance for forestry.

At the 17th World Congress in Kyoto in 1981, on the initiative of Dr. Walter Bosshard, Birmensdorf, the Executive Board approved the foundation of Project Group P6.01-00 "Revision of the Oxford System of Decimal Classification for Forestry", in order to resume responsibility for its control, maintenance, and development.

All session papers published between 1949 and 1973 by the Joint FAO/IUFRO Committee on Bibliography and Terminology were studied so as to establish a background based on previous traditions and experience.

As the Oxford System comprises part of the UDC, the "Principles of the Universal Decimal Classification and Rules for its Revision and Publication" were consulted.

At the 18th IUFRO World Congress in Ljubljana in 1986, it was a pleasure to see how many ODC users were interested in an updated forest classification. From 1983 to 1989, the Project Group P6.01-00 published 8 amendments to the system.

Regina Schenker

# Introduction to the classification

The classification was designed to be precise, flexible, and capable of extension. Users should study these notes carefully. Since the classification technique remains the same for the full and the short version, the examples are the same for both versions.

## (1) THE PRINCIPLES OF DECIMAL CLASSIFICATION

### (a) The decimal point

In a decimal system, all subdivisions are preceded by a decimal point, i.e., are represented as decimal fractions of a number signifying a particular subject. In the Forest Decimal Classification the ten primary heads run from .0 Forests, forestry, and the utilization of forest products to .9 Forests and forestry from the national point of view. Social economics of forestry. By convention, the decimal point is omitted in writing, but must be remembered in filing, so that, e.g., 239 precedes 24. It follows that the decimal points which are written after every third figure are purely conventional, serving merely to make long figures easier to read. For instance, 23232521 becomes 232.325.21.

### (b) Meaning of the digits .9 and .0

It is extremely important for the user that the general and the particular are not mixed and that general heads are not cumbered with fractions. In this system the digit .9 is exclusively reserved for 'miscellaneous'. Even where it does actually appear it is deemed to exist for every subdivision. Precisely defined, .9 means 'Miscellaneous topics belonging to the head of next higher rank but not classifiable under any of the subdivisions .0 to .8'. Thus 819 signifies 'Any property of wood which cannot be classified under any the heads 810-818', and excludes all preceding individual topics but includes any topics relevant to the next higher head, 81. This appears to be the only satisfactory means of guaranteeing accommodation for rare or new topics, and leaving the digits .91 to .98 available should such topics become so numerous or important as to require a subdivision of their own. In that case, 'miscellaneous' is classed under .99 [cf. (c) (ii)].

Sole exception: The primary head 9 (q.v.)

At the other end of the scale, the digit .0 has, as far as possible, been left open for subdivisions of more general import than the heads .1/.9. It should be borne in mind that .0 is not identical with its preceding head; for instance, 114.30 is more restricted than 114.3.

### (c) Occasional deviations from strict decimal subordination

In principle, subdivisions ought to receive numbers decimally subordinate to the number for the subject. This, however is an ideal which is not always possible, but obviously there is no automatic connection between the way in which knowledge is conventionally subdivided and the decimal scale, nor any absolute relation between the length of a decimal number and importance of the subject. Departures from strict decimal ranking consequently occur where:

- (i) the subdivisions of a subject are logically exhausted when only two or three digits of the decimal scale have been used; (ii) the subdivisions are too numerous to fit the decimal scale and difficult to form into convenient groups for this purpose.

For instance, under 83 Timber manufacturing industries and products. Uses of wood as such, the numbers 831 to 838 are inadequate for the subdivision required. Therefore 9 'Miscellaneous' was subdivided into 8 subheads, 839.1 to 839.8, which still left 839.9 open for 'Miscellaneous'. With this procedure, any head can theoretically be expanded ad infinitum. The departure from strict decimal ranking is unimportant in practice, and the various subdivisions can be distinguished through italics, bold type, inseting, etc.

### (d) Alphabetical subdivision

The system allows for alphabetical subdivision of heads, e.g., under names of species, persons, etc. 174.7 *Pinus sylvestris*; 902.1 Leibundgut, H. wherever suitable and desirable. Users classifying plant or animal families are advised to do so under heads 14 or 17 in parallel with the relevant UDC numbers.

## (2) MAIN AND AUXILIARY NUMBERS. SIMPLE AND COMPOUND NUMBERS.

The decimal numbers of the subject classification are called main numbers. Any main number standing alone, with no further symbols or numbers is a simple number.

Finer classification is achieved through auxiliary numbers of three kinds: (i) auxiliary numbers of subject; (ii) auxiliary numbers of form; and (iii) auxiliary numbers of place (geographical numbers). The numbers of (i) are listed in Appendix A, those of (ii) and (iii) in Appendix B.

To express combinations of ideas a main number may be combined with other main or auxiliary numbers or both, connected by standard symbols. The result is a compound number and - according to the connecting symbols used - some or all of its components may be separately registered, i.e., cross-referenced. The first component is then termed the key number.

Compound numbers require special rules for filing, as they are filed under both key and cross-reference numbers. These rules are described in the next section, assuming the use of citations, together with suggestions for the use of auxiliary numbers and cross-references. These rules should also apply to a computer database. Programs should be written for search strategies according to these rules, with citations stored as database records.

## (3) SYMBOLS USED TO FORM COMPOUND NUMBERS AND ORDER OF PRECEDENCE IN FILING

| Symbol | Meaning   |
|--------|---|
| /      | The stroke links two or more consecutive numbers, e.g., 172.6/9 means ALL the heads from 172.6 through 172.9. Such a number constitutes a single collective number and thus should be registered as a single citation.  |
| +      | A plus sign between two numbers means that each number has to be filed individually, e.g., 174.7 + 175.2 needs one citation under 174.7 and another under 175.2.  |
| (0/9)  | Round brackets indicate UDC auxiliary numbers of form (0) and place (1/9). Citations are not made for these unless they are written as key numbers or are preceded by a colon.  |
| :      | The colon means "in relation to". As in the UDC it implies that each of the numbers so joined receives a separate citation. If desirable for a big collection, 174.7 : 811 could be filed under 174 preceding 174.7 : 811.1 and under 811 the reverse form 811 : 174.7 could precede 811 : 174.9.   |
| --     | The double hyphen is peculiar to this system, and has two functions: (i) it denotes the auxiliary numbers --01 to --09; (ii) when it precedes a main number, to show that this is not registered in a cross-reference. In fact, it is used as an 'auxiliary number' with a more specific sense than the true auxiliary numbers. In filing under key numbers it has the same function as the colon, i.e., 174.7--811 is treated exactly as if it were written 174.7 : 811, the only difference being that the former receives no citation under 811 (cf. example below). |

Thus any number preceded by + or : must be given a separate citation. Otherwise, only the key number has a citation, the second number with () or -- serving merely to define the subject more precisely and ensure that it is filed correctly.

### Order of citations under a key number

- (I) Numbers connected by / to consecutive numbers. Note that, e.g., 172.6/9 precedes 172.6/7 because it includes more.
- (II) Simple numbers or numbers preceded by + have equal rank.
- (III) Compounds in which the key number is followed by UDC numbers of form and place (0/9); a colon makes no difference in the filing order.
- (IV) Compounds in which the key number is followed by another main number connected by either a colon or a double hyphen.
- (V) Alphabetical subdivisions of a key number
- (VI) The next decimal subdivisions, i.e., .1/9 of the relevant number.

## Sequence of numbers and their meanings:

### Example 1

|               |   |
|---------------|---|
| 174.6/.7      | <i>Ginkgoales and Coniferae as a group</i>  |
| 174.6         | <i>Ginkgoales</i>   |
| 174.7 or      | <i>Coniferae; the second case is one</i>  |
| 174.7 + 175.2 | <i>where conifers and monocots are treated separately in the same work, the + sign indicating that one reference will be filed here and the other under 175.2 Monocotyledoneae;</i> |
| 174.7: (021)  | <i>Handbook of the Coniferae, with or without a cross-reference under (021) Handbooks;</i>  |
| 174.7(021)    | <i>identical for filing purposes</i>  |
| 174.7: (51)   | <i>The Coniferae of China, with or without a cross-reference under (51) China;</i>  |
| 174.7(51)     | <i>identical for filing purposes.</i>   |
| 174.7--011.1  | <i>Nomenclature of the Coniferae</i>  |
| 174.7: 181.5  | <i>Reproductive behaviour of the Coniferae, with or without a cross-reference under 181.5 Reproductive behaviour;</i>   |
| 174.7--181.5  | <i>identical for filing purposes.</i>   |
| 174.7 : 811   | <i>Wood structure of the Coniferae, with or without a cross-reference under 811 Wood structure;</i>   |
| 174.7--811    | <i>identical for filing purposes.</i>   |

Coniferae subdivided alphabetically according to genus and species if this is desired

|       |                          |
|-------|--------------------------|
| 174.7 | <i>Abies alba</i>        |
| 174.7 | <i>Abies amabilis</i>    |
| 174.7 | <i>Picea abies</i>       |
| 174.7 | <i>Tsuga yunnanensis</i> |

### Example 2

|                 |   |
|-----------------|---|
| 847/848         | <i>Drying, handling, and storage of timber</i>  |
| 847             | <i>and/or Drying of timber, in the second instance</i>  |
| 847 + 854       | <i>the subject "grading" is treated separately in one and the same work and referenced as an entirely distinct bibliographical entity</i> |
| 847.2           | <i>Kiln drying</i>  |
| 847.2 : (048.1) | <i>Bibliography on kiln drying, with or without a reference for bibliographies</i>  |
| 847.2(048.1)    |   |
| 847.2 : (43)    | <i>Kiln drying in Germany, with or without a reference for Germany</i>  |
| 847.2(43)       |   |
| 847.2--01       | <i>Research on kiln drying</i>  |
| 847.2--090.2    | <i>History of kiln drying</i>   |
| 847.2 : 174.7   | <i>Kiln drying of conifers, with or without a reference for conifers</i>  |
| 847.2--174.7    |   |

## (4) AUXILIARY NUMBERS AND CROSS-REFERENCES

- The auxiliary numbers of form (0) refer only to the form for a given subject, e.g., encyclopaedia, textbook, etc. Like the geographical numbers (1/9), they are pure UDC numbers. Other auxiliary numbers of form can be borrowed as the user desires.
- The auxiliary numbers of subject --01/--09 are peculiar to this forest classification and must only be used within it. Their function is to allow a useful subdivision of numbers where these are likely to accumulate rapidly and form large masses difficult to consult. They classify general notions and are of wide application throughout the heads 1 to 9, but have little significance unless related to a particular subject. Cross-references to particular heads could not achieve the same effect, as the meaning of subject heads is restricted by the section to which they belong.

EXAMPLE: --090.2 means 'history', so that we can, for instance, write 841--090.2 for 'history of wood preservation' or 114--090.2 for 'history of soil science'. Neither of these concepts demands an independent main head, such as that at 902 for 'forest history'. It would be improper to use 902 as a cross-reference under 841 or 114 unless the meaning were 'in relation to forest history'.

The auxiliary subject numbers were designed:

- (1) to allow more detailed classification of notions;
- (2) to possess as much mnemonic value as possible by:
  - (a) using common mental associations of numbers and ideas, as between the main subdivisions --01/--09 and the main divisions 1/9, and reserving certain digits for particular senses, e.g., 4 for 'protection';
  - (b) furnishing numbers easily memorized and widely applicable to give certain kinds of subdivision involving a frequently recurring set of ideas;
- (3) to render possible a readily understandable sequence of information under the various heads.

Such auxiliary numbers are obviously only useful in large collections of documents. Where they are used, the following rules apply: Only cross-reference if the cross-reference gives the right sense. Only use an auxiliary subject number if a cross-reference cannot give the right sense.

- (c) Subject cross-references express relationships between different heads and make it possible to deal with complex subjects analytically. They provide the most rational means of effecting certain types of subdivision. For example, the classification gives only a single head, 443.3, for fungal and bacterial diseases of adult trees, with no explicit subdivision. However, it is practical to cross-reference in one of the several possible standard sequences, e.g., fungus species, type of control, geographical region, or host species. Not all of these cross-references need be registered separately (see below), but all will be taken into account in filing. The resulting combination would be: 443.3: 172.8 *Ceratostomella ulmi*: 414: (73) : 176.1 *Ulmus*, meaning 'fungal disease : caused by *C. ulmi*: its chemical control : in the USA: on *Ulmus*'. If all these numbers are made it is possible to find under 172.8 *Ceratostomella ulmi* all aspects of this fungus as a pathogen, under 414 all information on the chemical control of tree diseases, under (73) all tree diseases in the USA, and under 176.1 *Ulmus* all diseases of that genus. This is clearly an ideal which can seldom be fully achieved. The user can apply the principle according to his needs and economic situation. Many unsubdivided heads can be similarly treated, e.g., 242 Thinnings can be effectively subdivided by using auxiliary numbers, cross-references to tree species, to increment, etc.

In many cases the full set of cross-references is unnecessary. Consider two decimal numbers, A and B; it will often happen that information of the type A: B is not considered of direct interest under, say, B. In this case; we may write A--B, which defines the subject and ensures a proper filing order under A without necessitating a reverse entry under B : A. It may well be that the combination A: B is of direct interest under both heads but occurs so frequently as to involve needless duplication, since a single citation at B : A will suffice. As the symbols -- and : are equivalent in filing, the combinations A--B and A : B appear in the same place under 'A'. This is important, because special cases may occasionally require the combination A : B. Continuing the example above, it is clear that if the standard order is adopted for tree diseases, the second term is always a subdivision according to fungal species, and many citations can be saved by writing 443.3--172.8 *Ceratostomella ulmi*, etc. There are no universal rules for the sequence of components in compound numbers. The user must decide for himself what the key number is to be and in what sequence any auxiliary numbers and cross-references should follow. The filing rules described above automatically apply to the compound number selected. This question should be carefully considered to ensure that the choice accords with the relevant needs.

## (5) FILING ORDER OF CROSS-REFERENCES

For those who still use catalogue cards, a compound number will appear in identical form on all cards. To show the filing order of cross-references, it is then convenient to mark in colour the number that has to be read first. A compound of the type A : B + C : D would be marked thus:

- 1st card **A** : B + C : D
- 2nd card A : **B** + C : D
- 3rd card A : B + **C** : D
- 4th card A : B + C : **D**

Long compound numbers, very rarely used in practice for big collections but theoretically possible, can be resolved by using the + sign, e.g., 'Seed research in Sweden on Scots pine and Norway spruce' will be read as: FDC : 232.31--010: (485) + 174.7 *Pinus sylvestris* + 174.7 *Picea abies* and could be divided



as follows:

- 1st card 232.31--010
- 2nd card (485) +
- 3rd card 174.7 Pinus sylvestris --232.31--010 +
- 4th card 174.7 Picea abies --232.31--010

A simplified and more used version will be this without addition of the -- numbers.

## (6) MISCELLANEOUS

- (a) Alphabetical index: This was compiled to facilitate the use of the system, and also assist those wishing to construct a concordance with another system. Users should not rely on this index alone but should consult the number in the systematical part. Only with adequate experience can it be ensured that a number is being used in the right sense.
- (b) Domestic subdivision: Until subdivisions are authorized, any undivided main number may be subdivided provided the subdivision remains entirely domestic and unofficial, as in the subdivisions \*325 or 326. An asterisk denotes that no one method of subdivision has gained international acceptance. Users should not take the vacant numbers of a partly subdivided head and fill them domestically. These vacancies are reserved for new heads. Under 31, for example, the only numbers that may be used are 311, 312, and 319. If domestic subdivisions are wanted they must be applied to these three heads, the heads 313 to 318 being left vacant. When a number is domestically subdivided the symbol x should be inserted between the approved head and its domestic subdivisions, e.g., 319x1, 319x2, etc. This symbol does not affect the filing order. If it coincides with the conventional decimal point, the latter is best omitted, 319x1 being read for filing as 319.1. It is undesirable that domestic numbers appear at all in printed literature. In case it is absolutely necessary that they should, they must be clearly designated as such with the x symbol.

by F. C. Ford Robertson, Oxford, 1953;  
completely revised by Regina Schenker, Marja Zorn-Pogorelc, and Margaret Joyce Sieber,  
Zurich, 1989.



# **Global Forest Decimal Classification Schedules**





# Primary heads

- 0 Forests, forestry and the utilization of forests products
- 1 Factors of the environment. Biology
- 2 Silviculture
- 3 Work science (work studies). Harvesting of wood: Logging and transport. Forest engineering
- 4 Forest injuries and protection
- 5 Forest mensuration. Increment; Development and structure of stands. Surveying and mapping
- 6 Forest management. Business economics of forestry. Administration and organization of forest enterprises
- 7 Marketing of forest products. Economics of forest transport and the wood industries
- 8 Forest products and their utilization
- 9 Forests and forestry from the national point of view. Social economics of forestry





## 0 FORESTS, FORESTRY AND THE UTILIZATION OF FOREST PRODUCTS

[For general regional accounts of forests and forestry see 904]

N.B. The cipher 0 is the most general head of the scheme: it must on no account be subdivided except by means of auxiliary numbers or cross-references, i.e. the heads 01/09 are prohibited, but combinations such as 0--011 (= forest terminology) and 0(031) (= encyclopaedia of forestry) are allowed. For the auxiliary numbers of subject --01/--09 see Appendix A (p.81) For auxiliary numbers of form and place the UDC numbers (0/9) are adopted. A selection of these is given in Appendix B (p. 87) For general monographs of individual species or other taxonomic groups see comment at 17.

---

## 1 FACTORS OF THE ENVIRONMENT. BIOLOGY

### Primary subheads

- 10 General
- 11 Climate, situation, soil, hydrology (water conservation, soil conservation and erosion)
- 12 General biology
- 13 General zoology
- 14 Systematic zoology
- 15 Animal ecology. Game and fish management. Hunting, shooting and fishing
- 16 General botany
- 17 Systematic botany
- 18 Plant ecology
- 19 Miscellaneous

---

## 10 GENERAL

- 101 Site studies and site surveys in the broadest sense [For particular aspects, see the appropriate sub-divisions of the system, e.g. for soil surveys see 114.7]

## 11 SITE FACTORS: CLIMATE, SITUATION, SOIL, HYDROLOGY (WATER CONSERVATION, SOIL CONSERVATION AND EROSION)

- 111 The atmosphere. Meteorology. Climate and microclimate  
(Subdivided in parallel with UDC 551.5, which see for more detailed subdivisions if needed) [For damage by atmospheric factors see subheads of 42; for atmospheric factors contributing to forest fire danger see 431]
  - 111.0 Practical meteorology (methods, data, forecasts, etc.)
  - 111.1 Composition, structure, mechanics and thermodynamics of the atmosphere in general
    - 111.104 Composition
    - 111.105 General structure
    - 111.11 Mechanics, thermodynamics
    - 111.13 General circulation
    - 111.15 Atmospheric formations and disturbances. Changes. [Subdivide in parallel with UDC 551.5]
  - 111.2 Radiation and temperature
    - 111.21 Radiation
      - 111.211 Solar
      - 111.212 Terrestrial
      - 111.213 Absorption, scattering and transmission in the atmosphere
      - 111.216 Radiation of particular wavelengths
      - 111.219 Other radiations
    - 111.24 Air temperature
  - 111.4 Atmospheric pressure
  - 111.5 Wind
  - 111.7 Humidity, evaporation. Clouds etc. Precipitation. [For hydrological aspects see 116]
  - 111.71 Humidity

- 111.73 Evaporation
- 111.74 Condensation and deposits
  - 111.744 On the earth's surface
    - 111.744.1 Liquid (dew)
    - 111.744.2 Solid (rime, glazed ice etc.)
  - 111.747 On objects in the upper atmosphere
- 111.75 Fog and mist
- 111.76 Clouds
- 111.77 Precipitation in general
  - 111.771 Structure, formation and dissolution, classification
  - 111.772 Distribution at the earth's surface
  - 111.773 Variations
  - 111.78 Particular kinds of precipitation
    - 111.781 Rain, drizzle
    - 111.783 Mixed snow and rain
    - 111.784 Snow, granular snow, sleet, ice needles
    - 111.787 Hail
    - 111.789 Other kinds of precipitation
- 111.8 Climatology
  - 111.81 Solar climate. Climatic zones. Influence of latitude
  - 111.82 Climate of particular places and regions. Climatological monographs
  - 111.83 Climatic changes. Palaeoclimatology
  - 111.84 Microclimate. Microclimatology
  - 111.85 Climatic types
  - 111.86 Biometeorology. Bioclimatology
  - 111.87 Monographs on the upper atmosphere
  - 111.88 Influence of environment
- 111.9 Various influences and phenomena
  - 111.902 Cosmic influences
  - 111.91 Visibility
  - 111.93 Optical phenomena
  - 111.94 Electrical phenomena
  - 111.96 Acoustic phenomena
- 113 Situation**
  - 113.1 Longitude and latitude
  - 113.2 Altitude
  - 113.3 Gradient and aspect
  - 113.4 Configuration of ground. Topography
  - 113.9 Miscellaneous
- 114 Soil. Soil science**
  - 114.1 Soil physics (Arranged in parallel with UDC 631.43)
    - 114.11 Specific gravity. Density. Compaction
    - 114.12 Moisture. Soil water. Permeability. Absorption. Hygroscopicity. [For hydrological aspects see 116.2]
      - 114.122 Moisture content
      - 114.123 Permeability. Filtration. [Infiltration capacity]
      - 114.124 Absorption. Water-retaining capacity
      - 114.125 Hygroscopicity
      - 114.129 Miscellaneous [including Groundwater]
    - 114.13 Air and gases in the soil; soil atmosphere; soil respiration
    - 114.14 Soil structure and consistence. Homogeneity
    - 114.15 Soil texture. Analysis
    - 114.16 Soil temperature
    - 114.17 Electrical properties of the soil
    - 114.19 Miscellaneous
  - 114.2 Soil chemistry. Analysis (Arranged in parallel with UDC 631.41)
    - 114.22 Physico-chemical properties in general
    - 114.23 Electro-chemical soil properties. Exchange of ions.



- 114.231 Buffering, buffer capacity
- 114.234 Base exchange
- 114.239 Miscellaneous
- 114.24 Colloidal properties
- 114.242 Colloidal state
- 114.243 Absorption
- 114.249 Miscellaneous
- 114.25 Soil reaction; acidity, pH; soil acidification
- 114.26 Inorganic chemistry of soils
  - 114.261 Nitrogen and nitrogen compounds
  - 114.262 Phosphorus and phosphorus compounds
  - 114.263 Other non-metals and their compounds
  - 114.264 Potassium and potassium compounds
  - 114.265 Sodium and sodium compounds
  - 114.267 Calcium and calcium compounds
  - 114.268 Other metals and their compounds
  - 114.269 Miscellaneous
- 114.27 Organic chemistry of soils
- 114.28 The soil solution
- 114.29 Miscellaneous
- 114.3 Soil formation. The soil profile and its development
- 114.30 Soil-forming processes in general
  - 114.31 Relation to climate. Effects of water movement (general), leaching etc.
  - 114.32 Geological considerations. Weathering. Influence of parent material
  - 114.33 Relation to vegetative cover
  - 114.34 Relation to other factors
- 114.35/.36 The horizons of the profile
- 114.35 Litter and humus layers
  - 114.351 Litter
  - 114.354 Humus layers in general
  - 114.355 Mor. Raw humus
  - 114.356 Mull. Mild humus
  - 114.359 Miscellaneous
- 114.36 "Mineral soil" in general. A-C horizons
  - 114.361 A horizons, eluvial horizons. Surface pans and concretions
  - 114.362 B horizons, illuvial horizons. Pans and concretions below the surface
  - 114.363 C horizons
  - 114.364 Gley horizons
  - 114.369 Miscellaneous
- 114.38 Depth of soil
- 114.39 Miscellaneous
- 114.4 Soil classification. Soil types
  - 114.41 General matters
    - 114.411 Spatial disposition (catenas etc.)
  - 114.44 Genetic classification of soil types
    - 114.441 Zonal soils of humid climates
      - 114.441.1 Tundra soils
      - 114.441.2 Podzols
      - 114.441.3 Brown earths
      - 114.441.4 Grey-brown podzolic soils
      - 114.441.5 Degraded chernozems
      - 114.441.6 Prairie soils
      - 114.441.7 Subtropical and tropical analogues. Lateritic and laterite soils. Red and yellow earths. Terra rossa
      - 114.441.9 Miscellaneous earth
    - 114.442 Zonal soils of semi-arid and arid climates
      - 114.442.1 Chernozems
      - 114.442.2 Chestnut earths
      - 114.442.3 Brown semi-desert soils

- 114.442.4 Grey semi-desert soils
- 114.442.5 Desert soils (temperate)
- 114.442.7 Subtropical and tropical analogues. Tropical chernozems to red desert soils
- 114.442.9 Miscellaneous
- 114.443 Non-peaty groundwater soils
- 114.443.1 Gleys. Meadow soils
- 114.443.7 Vlei soils
- 114.443.9 Miscellaneous
- 114.444 Peat soils. Fenny soils [See also 232.23 for peatland forestry]
- 114.445 Saline and alkali soils
- 114.445.1 Saline soils (solonchak)
- 114.445.2 Alkali soils (solonetz. szik soils)
- 114.445.3 Degraded alkali soils (soloti)
- 114.445.9 Miscellaneous
- 114.446 Other intrazonal soils
- 114.446.1 Rendzinas
- 114.446.9 Miscellaneous
- 114.447 Alluvium
- 114.448 Skeletal soils
- 114.449 Miscellaneous
- 114.449.8 Industrial tips. Spoil mounds
- 114.449.9 Miscellaneous
- 114.46 Traditional (mainly textural) soil classification
- 114.461 Humus soils
- 114.462 Sandy soils
- 114.463 Clay and silt soils
- 114.464 Loam soils
- 114.465 Calcareous soils
- 114.466 Stony soils
- 114.467 Moraine soils
- 114.468 Loess soils
- 114.469 Miscellaneous
- 114.49 Miscellaneous
- 114.5 Soil fertility. Soil toxicity
- 114.52 Soil fertility. Nutrients [For fertilizers etc. see subheads of 2, especially 237.4; forest mensurational aspects see 54]
- 114.521 Determination of soil fertility
- 114.521.2 Physical methods
- 114.521.3 Chemical methods
- 114.521.4 Biological methods
- 114.521.5 Plant analysis
- 114.521.6 Indicator plants (bioindicators)
- 114.521.7 Vegetation as an indicator; plant communities (e.g. Cajander's 'forest types') [See also 182.3 for units of vegetation (associations etc.): theory and 182.4 for layer communities]
- 114.521.9 Miscellaneous
- 114.529 Miscellaneous
- 114.53 Soil toxicity
- 114.54 Fertilizer requirements
- 114.58 Soil depletion and exhaustion
- 114.59 Miscellaneous
- 114.6 Soil biology (Arranged in parallel with UDC 631.46)
- 114.61 Fermenting bacteria. Nitrification, denitrification etc.
- 114.66 Other microflora
- 114.67 Microfauna
- 114.68 Macrobiology
- 114.69 Miscellaneous
- 114.7 Soil surveys and surveying
- 114.9 Miscellaneous

## **116 Hydrology. Water conservation, soil conservation and erosion.**

### **Watershed management**

- 116.1 Effects of vegetation on precipitation, evaporation (including transpiration) and atmospheric humidity etc.
- 116.11 Canopy interception of rain; drip, stemflow etc.
- 116.12 Storage and distribution of snow (including effects on soil temperature etc.)
- 116.121 Snow pack
  - 116.121.1 Formation and deposition of snow, meteorological and morphological factors of snow cover development
  - 116.121.2 Snowdrift
  - 116.121.3 Evolution of the snow cover, physics and properties of snow
    - 116.121.31 Classification of snow, properties of snow
    - 116.121.32 Metamorphism of snow
    - 116.121.33 Energy balance, radiation, heat exchange
  - 116.121.4 Mechanics of snow, stress and forces
- 116.122 Avalanche
  - 116.122.1 Avalanche formation (release) and types of avalanches (classification)
  - 116.122.2 Avalanche dynamics, avalanche forces and track characteristics
- 116.123 Safety measures and risk management
  - 116.123.1 Permanent control of avalanches and snow
    - 116.123.12 Avalanche control by vegetation - forest control. Avalanche protection forest (including influences of vegetation on snow deposit, snow cover and avalanche dynamics)
      - 116.123.121 Forest and vegetation control (protection against avalanche release and snow gliding)
      - 116.123.122 Protection against erosion and minimising damage on vegetation and forest
    - 116.123.13 Avalanche control: Engineering works
      - 116.123.131 Engineering works, starting zone
      - 116.123.132 Engineering works: avalanche track, runout zone
    - 116.123.14 Hazard mapping
  - 116.123.2 Temporary control of avalanches and snow
    - 116.123.21 Avalanche warning
    - 116.123.22 Release of avalanches by explosives
    - 116.123.23 Temporary closures of roads
    - 116.123.24 Evacuation of buildings during hazardous times
- 116.129 Miscellaneous
- 116.13 Evaporation, transpiration, humidity and temperature
- 116.14 Amount of local precipitation (fog-drip etc.)
- 116.19 Miscellaneous
- 116.2 Studies of infiltration, run-off and water erosion
  - 116.21 Effects of meteorological factors
  - 116.23 Effects of topography
  - 116.24 Effects of soil factors and geological formation
  - 116.25 Effects of vegetation
  - 116.26 Effects of pastoral use
  - 116.27 Effects of cropping practices
  - 116.28 Effects of forestry practices (polluted water) (See also UDC 628.19 for pollution of water sources and supply (causes, prevention and removal))
- 116.29 Miscellaneous
- 116.3 Studies on stream-flow and bank erosion [Subdivide if necessary as 116.2]
- 116.4 Special studies of wind erosion [Subdivide if necessary as 116.2]
- 116.5 Erosion along roads, railways and canals
- 116.6 General accounts of erosion and practical erosion control
  - 116.61 Control on pastured land
  - 116.62 Contouring. Control by special methods of soil cultivation
  - 116.63 Control by farm cropping practices
  - 116.64 Control by forestry practices. [Use chiefly as a cross-reference from 266 (Shelterbelts) and 233 (Afforestation)]
- 116.65 Control on burnt or otherwise prepared areas, roadsides etc. by special cover.
- 116.69 Miscellaneous

- 116.7 Special measures for the correction and maintenance of water channels
- 116.8 Coast erosion and protection. Special measures for sand fixation (on the coast or inland)
- 116.81 Coast erosion and protection in general
- 116.82 Sand fixation (on the coast or inland)
- 116.89 Miscellaneous
- 116.9 Miscellaneous (e.g. water resources.)
- 116.91 Water quality

## **12 GENERAL BIOLOGY**

### **120 General ecology. General ecosystems**

- 121 Biodiversity** [See also 188 Forest communities; 152 Animal sociology, animal communities; 182 Synecology. Plant sociology (general, principles and methods); 907 Indirect significance of forests, conservation and environment protection; UDC 574.1 Biodiversity]

## **13 GENERAL ZOOLOGY**

### **130 Animal biochemistry**

#### **131 Physiology**

- 131.1 Blood, blood circulation
- 131.2 Respiration
- 131.3 Nutrition. Digestion. Senescence
- 131.4 Secretion. Excretion. Lymph; glands in general
- 131.6 Physiology of reproduction. Pregnancy
- 131.7 Movement. Locomotion
- 131.8 Function of the nervous system
- 131.9 Miscellaneous

### **132 Pathology. Teratology. Deformities**

### **133 Embryology. Ontogeny**

### **134 Organology. Anatomy**

- 134.1 Circulatory system
- 134.2 Respiratory system
- 134.3 Alimentary system. Organs of nutrition
- 134.4 Lymph system
- 134.6 Reproductive organs. Urogenital system. Mammae
- 134.7 Organs of movement. Locomotory organs
- 134.8 Nervous system
- 134.9 Miscellaneous

### **135 Phylogeny, evolution. Heredity, genetics and breeding, variation**

### **136 Economic zoology (general)**

- 136.0 Wild animals
- 136.1 Useful animals
- 136.5 Harmful animals [See preferably subheads of 45]
- 136.6 Endangered animals [cf. also 907.13]

### **138 Histology**

### **139 Miscellaneous**

## **14 SYSTEMATIC ZOOLOGY**

[It is recommended that the heads 142/149 be subdivided in parallel with UDC 592/599. A skeleton guide to the main divisions is given below, but users requiring numbers for individual families should consult the UDC for detail. See also comment at 17]

### **142 Invertebrata**

### **143 Plasmodroma (Protozoa, coelenterates, sponges etc.)**

### **144 Protostomata. Mollusca**

**145 Articulata**

- 145.1 Vermes, e.g. nematodes
- 145.2 Arthropoda
- 145.3 Branchiata. Crustacea
- 145.4 Arachnida
- 145.42 Acarina
- 145.5 Onychophora. Protracheata
- 145.6 Myriapoda
- 145.7 Insecta [See appendix C]

**147/149 Vertebrata**

- 147.2/.5 Pisces
- 147.6 Amphibia
- 148.1 Reptilia
- 148.2 Aves

**149 Mammalia**

- 149.1 Monotremata
- 149.2 Marsupialia
- 149.3 Eutheria
- 149.31 Edentata
- 149.32 Rodentia. Lagomorpha.
- 149.36 Insectivora
- 149.38 Macroscelididae
- 149.39 Dermoptera. Cynocephalidae. Colugos.
- 149.4 Chiroptera
- 149.5 Cetacea. Sirenia
- 149.6 Proboscidea. Elephantidae. Hyracoidea. Procaviidae. Tubulidentata. Orycteropodidae. Aardvark.
- 149.72 Perissodactyla
- 149.73 Artiodactyla
- 149.74 Carnivora
- 149.78 Scandentia, Tupaiidae
- 149.8 Primates
- 149.9 Miscellaneous

**15 ANIMAL ECOLOGY. GAME AND FISH MANAGEMENT; HUNTING, SHOOTING AND FISHING****150 Ecosystems****151 Mode of life, autecology, habits, adaptability**

- 151.1 Climatic (meteorological) requirements
- 151.2 Dispersion
  - 151.21 Change of locality, Migration, Orientation
  - 151.22 Hibernation etc.
- 151.3 Nutrition
  - 151.35 Special modes of nutrition
    - 151.351 Symbiosis
    - 151.352 Parasitism
    - 151.359 Miscellaneous
  - 151.4 Natural enemies
    - 151.41 Predators
    - 151.42 Parasites
- 151.5 Social and reproductive behaviour within the species or group [For sociology see 152]
- 151.6 Psychology. Instinct etc.
- 151.7 Protective devices
- 151.8 Production of sound
- 151.9 Miscellaneous

**152 Animal sociology, animal communities****153 Fluctuations and cycles of population**

- 153.1 Regular population cycles
- 153.2 Irregular population cycles
- 153.3 Other fluctuations of populations
- 153.4 Control of population cycles

**156 Game management. Hunting and shooting**

- 156.1 Fundamental game science (natural history, diseases, pests etc. of game) [With cross-references as appropriate to sections 12 to 15]
- 156.2 Management of game populations (game surveys, management plans; protection of game and hunting; game reserves etc.) [Cross-reference, if necessary, to 907]
- 156.3 Hunting and shooting (technique, weapons, hounds etc.)
- 156.4 Products of hunting and shooting and their utilization [Cross-reference, if necessary, to 893]
  - 156.41 Venison
  - 156.42 Antlers, heads, pelts, skins, hides etc.
- 156.5 Game damage and protection against game damage [Cross-reference, if necessary, to 451.2/.4]
- 156.6 Game policy and legislation (economic, administrative and social aspects)
- 156.7 History of game management and hunting
- 156.9 Miscellaneous (including statistics)

**157 Fish management. Fishing**

**159 Miscellaneous**

**16 GENERAL BOTANY**

**160 Plant chemistry** (Subdivided in parallel with UDC 581.192/.198)

- 160.2 Chemical composition. Analysis
  - 160.201 Foliage
  - 160.202 Bark
  - 160.203 Roots etc.
  - 160.204 Wood
- 160.21 Ash constituents. Mineral constituents
- 160.22 Organic constituents
- 160.24 Elements and compounds essential to the plant
  - 160.241 Carbon, carbon compounds
  - 160.242 Water
  - 160.243 Macro nutrients (N, S, P, K, Ca, Mg)
  - 160.244 Micro nutrients (Fe, Mn, Zn, B, Mo, Cu)
- 160.25 Elements and compounds not essential to the plant
- 160.26 Elements and compounds which are harmful or poisonous to the plant
- 160.27 Stimulants
- 160.28 Mutual influence of constituents. Protective action of salts
- 160.29 Miscellaneous

**161 Physiology** (Subdivided, except .5 and .9. in parallel with UDC 581.1)

- 161.1 Circulation of water and gases. Absorption. Exudation. Transpiration. (Only the mechanism of these processes is considered here)
  - 161.11 Absorption (uptake) of liquids and solutes
  - 161.12 Circulation of liquids and solutes. Sap flow
  - 161.13 Exudation of water and solutes
  - 161.14 Absorption of gases
  - 161.15 Circulation of gases
  - 161.16 Transpiration. Emission of gases
  - 161.19 Miscellaneous
- 161.2 Catabolic processes. Respiration
- 161.3 Assimilation. Reserves. Secretion
  - 161.31 Assimilation in autotrophic plants: general
    - 161.32 Carbon assimilation. Photosynthesis
    - 161.33 Assimilation of other substances by autotrophic plants
  - 161.34 Reserves: formation, translocation, mobilization and digestion
  - 161.35 Secretion, excretion
  - 161.36 Partial resorption of degenerated parts
  - 161.37 Assimilation in heterotrophic plants

- 161.38 Symbiosis, metabiosis. [Physiological aspects only: for ecological aspects see 181.351]
- 161.39 Miscellaneous
- 161.4 Physiology of development, physiology of growth, including growth regulators
- 161.41 Dormancy
- 161.6 Physiology of reproduction. [See preferably 165 or 181.5]
- 161.7 Cell physiology
- 161.8 Movements; irritability; sensitivity to stimuli, tropisms etc.
- 161.9 Miscellaneous
- 162 Pathology and teratology** [See preferably the subheads of 4]
- 163 Embryology**
- 164 Morphology.** (Subdivided in parallel with UDC 581.4)
  - 164.2 Thallus. Organs of lower plants
  - 164.3 Roots. Nutritional organs
  - 164.4 Stems (trunk), shoots, branches, twigs, buds
  - 164.5 Leaves, needles
  - 164.6 Flowers and inflorescences, (including flower buds). Pollen
  - 164.7 Fruits
  - 164.8 Seeds
  - 164.9 Miscellaneous
- 165 Phylogeny, evolution. Heredity, genetics and breeding, variation**
  - 165.1 Phylogeny, evolution
  - 165.2 Molecular genetics, Molecular biology, Genomics, Genetic mapping
  - 165.3 Heredity, genetics and breeding, variation: general [For practical applications see 232.13 and 232.311.3]
  - 165.4 Basic methods of breeding. Cytogenetics; chromosomes and genes
    - 165.41 Breeding by selfing and crossing (including cytogenetics)
    - 165.42 Chromosomes of taxonomic groups
    - 165.43 Breeding by using mutations
    - 165.44 Breeding by asexual reproduction, clones (Cf. also 181.51)
      - 165.441 Breeding by clones
      - 165.442 Breeding by tissue culture
    - 165.45 Quantitative genetics
    - 165.46 Breeding strategies
    - 165.49 Miscellaneous
  - 165.5 Natural variation
    - 165.51 Morphological
    - 165.52 Geographical
    - 165.53 Physiological
    - 165.55 Conservation genetics; ex-situ & in-situ conservation
    - 165.59 Miscellaneous
  - 165.6 Selection
    - 165.61 Natural
    - 165.62 Artificial; plus trees
    - 165.69 Miscellaneous
  - 165.7 Hybrids (taxonomic aspects)
    - 165.71 Natural
    - 165.72 Artificial
    - 165.73 Chimaeras, graft hybrids
    - 165.79 Miscellaneous
  - 165.8 Biotechnology
  - 165.9 Miscellaneous
- 166 Economic botany (general)**
  - 166.1 Useful plants. [See preferably Forest Products under 8 and its subheads]
  - 166.5 Harmful plants. [See preferably Weeds, Diseases, etc., under 4 and its subheads]
  - 166.6 Endangered plants [cf. also 907.12]
- 168 Cytology and histology**
- 169 Miscellaneous**

## 17 SYSTEMATIC BOTANY

[It is recommended that the heads 172/179 be subdivided in parallel with UDC 582.2/.9. A skeleton guide to the main subdivisions is given below, but users requiring numbers for individual families should consult the UDC for detail. Note that numbers are provided in the UDC for families, genera and many individual species of wood under the head 674.03, in parallel with UDC 582.2/.9. Alternatively, under the rule at (1d) in the Introductory Note, the numbers given below may be subdivided alphabetically to genus and species, e.g. 174.7 *Picea abies*. The numbers that follow, with their further subdivisions (alphabetical or numerical) can serve, by using cross-references, as an index to any other information on the plants concerned, as well as pure taxonomy. The procedure is explained by examples in section (3) of the Introduction. Two further examples: (a) General monographs on individual taxonomic units (chiefly species) may be referenced as 0 : 17..., or 0-- 17..., or 17...--0; (b) their general silviculture is treated similarly as 2 : 17..., or 2--17..., or 17...--2. If only one card can be allowed, the third method has the advantage of collecting all the information on e.g. a species in a single place in the catalogue viz. at 17...--. If desired, the same procedure may be used for animals, under 14.]

### 170.1 Herbaria

### 172 Bacteria, algae and fungi

#### 172.1 Cryptogams

##### 172.2 Thallophyta

172.3 Schizophyta, Schizomycetes, Schizophyceae (bacteria and blue-green algae)

172.4 Phytosarcodina, Myxothallophyta, Myxomycetes (slime fungi)

172.5 Flagellates

172.6 Algae

172.8 Eumycetes (true fungi)

172.9 Lichens

173.1 Archegoniatae. Asiphonogamous embryophyta

173.2 Bryophyta (liverworts and mosses)

173.5 Pteridophyta, vascular cryptogams (horsetails, ferns etc.)

### 174 Embryophyta. Siphonogamia. Spermatophyta. Phanerogams. Seed-plants in general. Dendrology

174.2 Gymnospermae

174.4 Cycadales

174.6 Ginkgoales

174.7 Coniferae

174.9 Gnetales

### 175 Angiospermae

175.2 Monocotyledoneae

176.1 Dicotyledoneae

## 18 PLANT ECOLOGY

### 180 Ecosystems

#### 181 Mode of life, autecology. Silvicultural characters of trees

181.1 Distribution, natural range

181.2 Atmospheric relations. Acclimatization. [Where possible, refer for preference to subheads of 4: influence of environmental pollution see 181.45]

181.21 Light relations

181.211 Light requirements and tolerance in general

181.212 Seasonal light requirements and tolerance; photoperiodic behaviour

181.213 Effect of light in the environment

181.219 Miscellaneous

181.22 Temperature relations

181.221 Temperature requirements and tolerance in general

181.221.1 Reaction to cold

181.221.2 Reaction to heat [Reaction to drought see 181.31; reaction to fire see 181.43]

181.221.9 Miscellaneous

181.222 Seasonal temperature requirements and tolerance; thermoperiodic behaviour



- 181.223 Effect of temperature in the environment
- 181.229 Miscellaneous
- 181.23 Relations to wind and other air movements
- 181.231 Wind tolerance in general
- 181.232 Reaction to particular types of wind
- 181.233 Effects of wind and other air movements
- 181.24 Reaction to precipitations (e.g. snow, hail) [Cf. also Water relations 181.31]
- 181.26 Relation to electrical phenomena (lightning etc.)
- 181.28 Acclimatization
- 181.29 Miscellaneous
- 181.3 Water, soil and root relations
- 181.31 Water relations
- 181.311 Water requirements
- 181.312 Role in the water cycle
- 181.319 Miscellaneous
- 181.32 Soil and nutrient relations (general)
- 181.33 Physical soil relations
- 181.34 Soil nutrient and chemical soil relations
- 181.341 Nutrient requirements
- 181.342 Chemical factors affecting nutrient uptake (pH, Eh, aeration etc.)
- 181.343 Effect on the soil
- 181.349 Miscellaneous
- 181.35 Special modes of nutrition
- 181.351 Symbiotic relationships (bacterial and mycorrhizal symbiosis etc.)
- 181.352 Parasitism
- 181.359 Miscellaneous
- 181.36 Root relations and root development etc.
- 181.37 Desertification
- 181.39 Miscellaneous
- 181.4 Reaction including resistance to biotic influences, fire and environmental pollution** [Where possible, refer for preference to subheads of 4]
- 181.41 Plant competition, allelopathy, etc.
- 181.42 Influence of animals
- 181.43 Influence of fire
- 181.45 Influence of environmental pollution
- 181.48 Influence of man (e.g. recreation)
- 181.49 Miscellaneous
- 181.5 Reproductive behaviour**
- 181.51 Asexual (vegetative) reproduction, clones. [Cf. also 165.44]
- 181.52 Sexual reproduction
- 181.521 Flowering and pollination
- 181.522 Fruiting
- 181.523 Seed dispersal
- 181.524 Seed longevity, dormancy etc.
- 181.525 Germination and seedling development
- 181.526 Pollen: Viability, Dispersion
- 181.529 Miscellaneous
- 181.59 Miscellaneous
- 181.6 Life form, habit. Post-seedling development and form
- 181.61 Life form. Habit. (General)
- 181.62 Crown form and crown relations
- 181.63 Persistence or shedding of branches. Self-pruning. Epicormics
- 181.64 Stem form [For mensurational aspects see 524.1]
- 181.65 Growth (increment) as influenced by environment (including silvicultural treatment)
- 181.66 Lammas shoot
- 181.69 Miscellaneous
- 181.7 Duration, longevity; stature; records of exceptional age or size. Effects of age on behaviour
- 181.71 Duration, longevity; stature; records of exceptional age or size

- 181.75 Effects of age on behaviour
- 181.76 Dead trees (including the ecological role after death of plants or parts of plants, e.g. standing dead trees, slumps, fallen logs) [for litter proper see 114.351]
- 181.79 Miscellaneous
- 181.8 Phenology
- 181.9 Miscellaneous

**182 Synecology. Plant sociology (general, principles and methods)**

- 182.1 Palaeoecology. Palaeobotany. History of vegetation. Pollen analysis [See also 561.24 for variations and trends, dendrochronology]
- 182.2 Succession, alternation and periodicity in vegetation
  - 182.21 Succession. Seral communities and seres
  - 182.22 Climaxes and proclimaxes
  - 182.23 Ecotones
  - 182.24 Spatial alternation. Alternes
  - 182.25 Temporal alternation (e.g. alternation of dominants)
  - 182.28 Seasonal aspects
  - 182.29 Miscellaneous
- 182.3 Units of vegetation (associations etc.): theory
- 182.4 Layer communities
  - 182.41 Dominant tree layer
  - 182.42 Understorey tree layers
  - 182.43 Lianes
  - 182.44 Epiphytes (stem and branch)
  - 182.45 Epiphyllous plants
  - 182.46 Shrub layers [See also 289.5]
  - 182.47/.48 Ground layers
    - 182.47 Herbaceous layers
    - 182.48 Moss or lichen layers [See also 289.6]
  - 182.49 Miscellaneous
- 182.5 Synecological measurements and methods
  - 182.51 Statistical expression of structure. Measures of density, frequency, constancy etc.
  - 182.52 Detailed analysis by quadrats, transects etc.
  - 182.53 Manipulation of vegetation as an experimental method
  - 182.54 Manipulation of biotic factors as an experimental method
  - 182.55 Manipulation of (abiotic) site factors as an experimental method
  - 182.58 Methods of general vegetational survey and mapping
  - 182.59 Miscellaneous
- 182.8 Ecology of artificial (cultivated) plant communities etc.
- 182.9 Miscellaneous

**187\* Vegetation types, ecotypes** [See 114.521 for soil fertility]

**188\* Forest communities**

**189\* Miscellaneous**

**19 MISCELLANEOUS**

## 2 SILVICULTURE

### Primary subheads

- 22 Silvicultural systems. Constitution and composition of stands; forms of stand
- 23 Regeneration and formation of stands
- 24 Tending of stands or trees
- 25 Treatment of defective, derelict or very open stands
- 26 Combinations of forestry with agriculture and pastoral husbandry, (agroforestry). Irrigated and floodland forests, shelterbelts etc., and their treatment
- 27 Arboreta. Arboriculture for ornamental purposes. Hedges and hedge plants
- 28 Husbandry (growing and collection) of forest products other than wood
- 29 Miscellaneous

---

### 22 SILVICULTURAL SYSTEMS. CONSTITUTION AND COMPOSITION OF STANDS; FORMS OF STAND

- 221 **High forest systems**
  - 221.0 The basic types of felling ('Hiebsarten')
  - 221.01 Clear felling
  - 221.02 Shelterwood felling
  - 221.03 Fellings affording marginal shelter ('Randhieb')
  - 221.04 Selection felling
  - 221.09 Miscellaneous
  - 221.1 Clear-felling system. [Clear-strip systems see 221.221 and 221.222]
  - 221.2 Systems of successive regeneration fellings
    - 221.21 Uniform system. 'Seed-tree method'
    - 221.22 Strip systems
      - 221.221 Progressive clear-strip system
      - 221.222 Alternate clear-strip system
      - 221.223 Shelterwood strip system
      - 221.224 Wagner's Blendersaumschlag
      - 221.225 Wedge system
      - 221.226 Strip-and-group system
      - 221.229 Miscellaneous
    - 221.23 Group system. Irregular shelterwood system, Femelschlag (Swiss etc.)
    - 221.29 Miscellaneous
  - 221.4 Selection systems
    - 221.41 Selection system proper
      - 221.411 Group selection system
    - 221.42 "Selective logging"
    - 221.49 Miscellaneous
  - 221.5 Accessory systems
    - 221.51 High forest with reserves (standards)
    - 221.52 Two-storeyed high forest
    - 221.59 Miscellaneous
  - 221.6 *Dauerwald*, continuous forest
  - 221.9 Miscellaneous
- 222 **Coppice, pollarding and lopping systems**
  - 222.1 Coppice with standards
  - 222.2 Simple and shelterwood coppice
    - 222.21 Simple coppice
    - 222.22 Selection coppice
    - 222.23 Shelterwood coppice

- 222.29        Miscellaneous
- 222.3        Pollarding and lopping systems
- 222.9        Miscellaneous
- 223        Protection forest**
- 226        Changes of silvicultural system. Conversion (by system or species)**
- 228        Constitution and composition of stands; forms of stand**
- 228.0        Choice of species and form of mixture
- 228.1        Density. Dominance and suppression. Tree classes
- 228.11        Overhead cover and density. [For branchiness, epicormics etc. see 181.63]
- 228.12        Dominance and suppression
- 228.125        Tree classes
- 228.129        Miscellaneous
- 228.2/.3        Pure and mixed stands
- 228.2        Pure stands
- 228.3        Mixed stands
- 228.5/.6        Even-aged and uneven-aged stands
- 228.5        Even-aged stands
- 228.6        Uneven-aged stands
- 228.7/.8        Artificial and natural stands
- 228.7        Artificial stands. Plantations
- 228.8        Natural stands
- 228.81        Virgin stands
- 228.82        Natural stands obtained after cutting. "Second-growth" stands [For forest management of second growth forests combine with 63]
- 228.9        Miscellaneous e.g border trees and shrubs as a protective surround

## **23        REGENERATION AND FORMATION OF STANDS**

- 230        Forms of regeneration**
- 230.1        Regeneration over large areas
- 230.2        Regeneration by groups
- 230.3        Regeneration by strips
- 230.9        Miscellaneous
- 231        Natural regeneration**
- 231.1        Natural regeneration obtained from advance growth. [For planting in advance see 235.2]
- 231.3        Preparatory measures for securing natural regeneration
- 231.31        Manipulation of canopy
- 231.32        Manipulation of undergrowth and ground vegetation
- 231.321        By cutting, scraping etc.
- 231.322        By burning
- 231.323        By grazing
- 231.324        By poisoning
- 231.329        Miscellaneous
- 231.33        Manipulation of soil
- 231.331        Soil cultivation
- 231.332        Fertilizing
- 231.339        Miscellaneous
- 231.39        Miscellaneous
- 231.4        Natural regeneration from coppice. [Cf. also 222]
- 231.41        Effect of season of cutting
- 231.42        Effect of height of cutting
- 231.43        Effect of age or size of trees cut
- 231.44        Effect of trimming stumps
- 231.49        Miscellaneous
- 231.5        Natural regeneration from root suckers
- 231.9        Miscellaneous

## **232 Artificial regeneration**

- 232.1 Choice and trial of species, races etc.
- 232.11 Species trials (including forest gardens, trials of exotics etc.)
- 232.12 Races and provenance trials
- 232.13 Trials of hybrids and other products of tree breeding. [Cf. also 165 and 232.311.3]
- 232.19 Miscellaneous
- 232.2 Preparatory work, auxiliary measures
  - 232.21 Pretreatment and preparation of site
    - 232.211 Clearing the ground
    - 232.212 Grazing
    - 232.213 Burning
    - 232.214 Other herbage control
    - 232.215 Draining
    - 232.216 Soil preparation, including ploughing
    - 232.217 Irrigation (before sowing or planting)
    - 232.219 Miscellaneous. [For pre-cropping with trees or shrubs as nurses see 235.2]
  - 232.22 Artificial regeneration combined with agriculture. [Cf. also 261]
  - 232.23 Peatland forestry [See also 114.444 Peat soils]
  - 232.29 Miscellaneous
- 232.3 Seed, nursery practice, direct sowing
  - 232.31 Seed
    - 232.311 Seed production (seed years, seed crops etc.)
      - 232.311.1 Seed years, seed crops
      - 232.311.2 From elite trees and stands
      - 232.311.3 Seed orchards, dwarf grafts, etc., including methods of inducing seed production
      - 232.311.4 Preventing seed production (e.g. transgenic experiments)
      - 232.311.9 Miscellaneous
    - 232.312 Seed collection, extraction and grading (processing)
      - 232.312.1 Collection
      - 232.312.2 Extraction
      - 232.312.3 Sorting and grading (including effect on germination and subsequent growth)
        - 232.312.31 Seed weights
      - 232.312.4 Processing
      - 232.312.9 Miscellaneous
    - 232.314 Seed purchase, trade and transport (including seed certification and legislation for this purpose)(phytosanitary problems)(exchange of germplasm). Intellectual property rights
  - 232.315 Seed storage and treatment
    - 232.315.1 Disinfection and disinfestation of seed. Fumigation
    - 232.315.2 Methods of storage. [For longevity of seed see 181.524]
    - 232.315.3 Seed pretreatment, including stratification and vernalization
    - 232.315.4 Seed dressings
    - 232.315.9 Miscellaneous
  - 232.318 Seed testing. Germination tests. Seed quality
  - 232.319 Miscellaneous
- 232.32 Plant rearing. Nursery practice
- 232.320 Nurseries
  - 232.321 Nursery sites, including factors affecting selection of sites for nurseries
  - 232.322 Preparation and treatment of soil, including maintenance of fertility
    - 232.322.1 Nursery rotations, including fallowing, green manuring, leys and crop rotations
    - 232.322.2 Sterilization
    - 232.322.3 Acidification
    - 232.322.4 Use of manures, fertilizers, composts, etc. (including general information on fertilizers)
      - 232.322.41 Inorganic fertilizers
        - 232.322.411 Nitrogen fertilizers
        - 232.322.412 Phosphate fertilizers
        - 232.322.414 Potassium fertilizers
        - 232.322.417 Calcium fertilizers; lime
        - 232.322.419 Miscellaneous
      - 232.322.42 Trace elements

- 232.322.43 Organic manures, except composts (e.g. sewage sludge)
- 232.322.44 Composts and composting, including use of litter and household refuse
- 232.322.45 Inoculation
- 232.322.49 Miscellaneous, including soil conditioners, e.g. Kriliium
- 232.322.5 Cultivation and soil working; tilth conditions
- 232.322.6 Formation of beds
- 232.322.9 Miscellaneous
- 232.323 Sowing and covering
  - 232.323.1 Methods of sowing (drilling, broadcasting, etc., including mechanical methods)
  - 232.323.2 Density of sowing and quantity of seed
  - 232.323.3 Date and season of sowing
  - 232.323.4 Weather and soil conditions at time of sowing
  - 232.323.5 Covering media and depth of covering
  - 232.323.6 Rolling and compacting seedbeds
  - 232.323.7 Special intensive methods (e.g. use of glass, soil heating etc.)
  - 232.323.9 Miscellaneous
- 232.324 Transplanting and lining out
  - 232.324.1 Lifting of seedlings, including methods and equipment
  - 232.324.2 Grading of seedlings for lining out. Effect of seedling size and quality on subsequent growth
  - 232.324.3 Lining-out density
  - 232.324.4 Season and date of lining out
  - 232.324.9 Miscellaneous
- 232.325 Tending (in both seedbeds and transplant beds)
  - 232.325.1 Watering and irrigation
  - 232.325.2 Weeding, weed control and cultivation
    - 232.325.21 Hand weeding and hoeing
    - 232.325.22 Mechanical methods
    - 232.325.23 Flame gun, flame hoe, torches
    - 232.325.24 Weed killers
    - 232.325.29 Miscellaneous
  - 232.325.3 Mulching
  - 232.325.4 Thinning out of seedlings
  - 232.325.5 Acclimatization and "hardening off" of nursery plants
  - 232.325.9 Miscellaneous
- 232.326 Salvage of overgrown seedlings and transplants. Root or shoot pruning etc.
  - 232.326.1 Root pruning
  - 232.326.2 Wrenching and undercutting
  - 232.326.3 Shoot pruning
  - 232.326.9 Miscellaneous
- 232.327 Protection measures in nurseries
  - 232.327.1 Against inorganic agencies
    - 232.327.11 Sheltering from wind and rain
    - 232.327.12 Shading (against insolation)
    - 232.327.13 Protection from frost
    - 232.327.19 Miscellaneous
  - 232.327.2 Against fungus and virus diseases
  - 232.327.3 Against mammals and birds
  - 232.327.4 Against insects and other animals
  - 232.327.9 Miscellaneous
- 232.328 Vegetative propagation
  - 232.328.1 By stem cuttings
  - 232.328.2 By root cuttings
  - 232.328.3 By root suckers
  - 232.328.4 By layering
  - 232.328.5 By budding and grafting
  - 232.328.6 Tissue culture
  - 232.328.9 Miscellaneous
- 232.329 Miscellaneous

- 232.329.1 Greenhouses
- 232.329.2 Heated frames
- 232.329.3 Cold frames
- 232.329.4 Phytotron
- 232.329.6 Raising in pots, tubes, containers etc.
- 232.329.9 Miscellaneous
- 232.33 Formation of stands by direct sowing. [For spacing see 232.43]
- 232.331 Type of sowing (patch, line etc)
- 232.332 Use of compost and fertilizer (including mulching, soil inoculation etc.)
- 232.333 Density of sowing and quantity of seed
- 232.334 Method of covering
- 232.335 Date and season of sowing
- 232.336 Protective measures
- 232.337 Tools and equipment, including mechanical methods
- 232.338 Air seeding
- 232.339 Miscellaneous
- 232.4 Formation of stands by planting
- 232.41 Planting stock
- 232.411 Sources of stock. Plant acquisition and trade. Kind of stock
- 232.411.1 Sources of stock: plant acquisition and trade (including certification of planting stock and legislation for this purpose)
- 232.411.2 Age and type
- 232.411.3 Grading and size
- 232.411.4 Vegetatively propagated stock; clonal forestry
- 232.411.5 Stock produced by different nursery treatments
- 232.411.6 Use of natural forest (wilding) stock
- 232.411.9 Miscellaneous
- 232.412 Handling and treatment of stock
- 232.412.1 Lifting
- 232.412.2 Root pruning, shoot pruning, stumping
- 232.412.3 Heeling in (including early lifting, burying etc.)
- 232.412.4 Exposure of plants before planting (including transport, methods of packing, etc.)
- 232.412.5 Puddling
- 232.412.6 Root and plant dressings (protective)
- 232.412.7 Cold storage
- 232.412.9 Miscellaneous
- 232.42 Methods of planting. Fertilizers etc.
- 232.421 Notching, pitting, mounding etc.
- 232.422 Position of plant on turf, furrow etc. (including slant planting)
- 232.423 Depth of planting
- 232.424 Care in planting (including effect, if any, of careless planting methods)
- 232.425 Manuring, mulching and soil inoculation at time of planting
- 232.425.1 Inorganic fertilizers (including trace elements)
- 232.425.2 Organic manures e.g. sewage sludge, composts, green manuring, etc.
- 232.425.3 Mulching
- 232.425.4 Soil inoculation
- 232.425.9 Miscellaneous
- 232.427 Planting tools and mechanical methods of planting
- 232.429 Miscellaneous methods of planting, including ball planting, bunch planting etc.
- 232.43 Spacing and arrangement in plantations
- 232.44 Season and time of planting
- 232.49 Miscellaneous
- 232.5 Artificial formation of stands by vegetative propagation (e.g. direct planting of unrooted cuttings)
- 233\* Afforestation (of particular types of land).** [Cross-reference, as appropriate, to subdivisions of 114.4, 116, or 187. For afforestation policy see 913/914]
- 234\* Formation of forest by natural succession.** [Cf. 182.21]

**235 Underplanting, advance planting etc. Nurses and formation of mixtures**

- 235.1 Underplanting
- 235.2 Planting in advance, shelterwoods and pioneer crops
- 235.4 Nurses and auxiliary species
  - 235.41 Trees
  - 235.42 Shrubs and cover crops
- 235.5 Formation of ("long-term") mixture
- 235.6 Interplanting ("enrichment") of inferior growth with more valuable species
- 235.9 Miscellaneous

**236 Care of regeneration or plantations in the initial stages of establishment**

- 236.1 Weeding
- 236.2 Tending of the young crop itself, respacing (removal of plants or cutting back to improve growth and form, or for the regulation of mixtures etc. [Cf. also 241])
- 236.3 Sheltering and shading
- 236.4 Supervision (including inspection paths). Regeneration surveys
- 236.5 Filling blanks (beating up)
- 236.6 Treatment of failed or partially failed plantations
- 236.9 Miscellaneous

**237 Amelioration of forest sites.** [For engineering aspects see 385, and for economic aspects see 651.7]

- 237.1 Ploughing or soil working
- 237.2 Draining
- 237.3 Mounding and mulching
- 237.4 Use of fertilizers, manures e.g. sewage sludge, composts of soil inoculations [Subdivide, if necessary, as 232.322.4]
- 237.5 Interplanting
  - 237.51 With substitute species
  - 237.52 With nurses
- 237.6 Irrigation
- 237.7 Tools and equipment incl. mechanical methods
- 237.9 Miscellaneous (including turf lifting)

**238 Timber plantation crops requiring special treatment. Biomass**

(e.g. Poplar plantations, rootwood of *Erica arborea* etc.) [including intensive silviculture of plantations for extra rapid growth on short rotations, and information on species suitable for this purpose. (Use for general matter on this topic, but reference individual operations under the appropriate heads, e.g. pruning under 245.1)]

**239 Miscellaneous**

**24 TENDING OF STANDS AND TREES**

**241 Cleanings, precommercial thinning(s) and respacing.** [Cf. also 236.2]

**242\* Thinnings**

**243\* Opening of the canopy (increment fellings, overhead release and improvement fellings)**

- 243.8 Girdling and poisoning
- 243.9 Miscellaneous

**244 Climber cutting etc.**

**245 Tending of trees**

- 245.1 Pruning and brashing. Tree surgery
  - 245.11 Brashing
  - 245.12 Dry pruning
  - 245.13 Green pruning
  - 245.14 Bud pruning
  - 245.17 Pruning tools and equipment
  - 245.18 Tree surgery
  - 245.19 Miscellaneous
- 245.9 Miscellaneous

**249 Miscellaneous e.g. control of undesirable undergrowth (including shrubs and coppice)**



## **25 TREATMENT OF DEFECTIVE, DERELICT OR VERY OPEN STANDS**

## **26 COMBINATIONS OF FORESTRY WITH AGRICULTURE AND PASTORAL HUSBANDRY, (AGROFORESTRY). IRRIGATED AND FLOODLAND FORESTS, SHELTERBELTS ETC., AND THEIR TREATMENT**

### **261 Alternate forestry and agriculture, periodic or temporary agricultural use of forest land**

- 261.1 High forest with field crops (traditional European forms)
- 261.2 Coppice with field crops (traditional European forms)
- 261.3 Shifting cultivation. [For taungya method of plantation establishment alone see 232.22]
- 261.9 Miscellaneous

### **262 Fuel and fodder forests. Energy forests (short rotation plantations)**

### **263 Irrigated forests. Forests subject to flooding or seepage (Auewald)**

### **264 Farm forests**

### **265 Strips or lines at road, rail and canal sides etc.; hedgerow trees (see 274); alley cropping**

### **266 Shelterbelts, windbreaks**

### **267 Border, fringe of a forest**

### **268 Pastured forests. Grazing on forest and open ranges**

- 268.1 Forest grazing; forest pastures
- 268.2 Grazing on open ranges; open pastures
- 268.3 Forage plants. [Cf. also 268.44]
- 268.4 Maintenance and improvement of pastures
  - 268.41 Revegetation
  - 268.43 Control of animal pests
  - 268.44 Undesirable plants and their eradication
  - 268.49 Miscellaneous
- 268.5 Forage types and yields
- 268.6 Organization and control of grazing
- 268.9 Miscellaneous

### **269 Miscellaneous**

## **27 ARBORETA, ARBORICULTURE FOR ORNAMENTAL PURPOSES. HEDGES AND HEDGE PLANTS**

### **270 Urban forestry**

- 270.9 Damage by plants, e.g. trees to buildings

### **271 Arboreta**

### **272 Parks**

### **273 Ornamental street and roadside trees**

- 273.1 Trees for seaside planting

### **274 Hedges and hedge plants**

### **278 Dwarf trees e.g. bonsai**

### **279 Miscellaneous**

## **28 HUSBANDRY [GROWING AND COLLECTION] OF FOREST PRODUCTS OTHER THAN WOOD**

### **281 Christmas trees**

### **282 Bark crops**

- 282.1 Tanbark
- 282.2 Cork

- 282.3 Medicinal barks
- 282.4 Bark for fibre products
- 282.9 Miscellaneous
- 283 Fruit and seed crops (from trees)**
- 283.1 Fruit crops
- 283.2 Nut crops
- 283.3 Seed crops
- 283.4 Seed fibres
- 283.9 Miscellaneous
- 284 Crops tapped for exudations**
- 284.1 Resin crops
- 284.2 Gum crops
- 284.3 Latex crops
- 284.4 Sap-sugar crops
- 284.9 Miscellaneous
- 285 Leaf crops.** [For leaf fodder see 262]
- 286 Osier-growing**
- 287 Bamboo- and cane-growing**
- 288 Crops grown for animal products (e.g. lac, silkworms)**
- 289 Husbandry (growing) of other non-wood products**
- 289.1 Mushrooms
- 289.4 Shade trees for crops
- 289.5 Berries from undergrowth [See also 182.46/182.47]
- 289.6 Lichens [See also 182.44 and 182.48]
- 289.61 Lichens for food (reindeer)
- 289.62 Lichens for decoration
- 289.9 Miscellaneous

## **29 MISCELLANEOUS**

### **3 WORK SCIENCE (WORK STUDIES). HARVESTING OF WOOD: LOGGING AND TRANSPORT. FOREST ENGINEERING**

#### **Primary subheads**

- 30 Work science (work studies): general**
- 31 Logging and transport: general**
- 32 Felling and related operations**
- 33 Degree of utilization and waste. Clearing the felling site**
- 34 Storage of wood in the forest and at log dumps (landings)**
- 35 Performance measurements for determining piece rates in felling and related operations**
- 36 Tools, machines and equipment for felling and related operations**
- 37 Transport**
- 38 Forest engineering**
- 39 Miscellaneous**

---

#### **30 WORK SCIENCE (WORK STUDIES): GENERAL**

[The numbers in this section may be cross-referenced, as appropriate, to any others in the system that deal with operations, e.g. especially the subdivisions of 2-Silviculture, 38- Forest Engineering, 4-Forest Protection and 5-Mensuration and Survey (q.v.)] (This subject is dealt with on a broader basis at UDC 658)

- 300 General
- 301 Methods of study
- 302 Man and work (physiology and psychology). Ergonomics [For social problems see 96]
- 303 Training in work science and efficiency
- 304 Hygiene. Safety. Accidents and their prevention. [For workers' insurance see 964]
- 305 Sequence of work and performance. Calculation of wages based on performance measurements (time and performance tables, evaluation of work)
- 306 Conditions affecting work (climate, site, stand etc.)
- 307 Mechanization: tools, equipment, machines. Working animals
- 308 Planning (organization) of work. [For administrative aspects see 684]
- 309 Miscellaneous

#### **31 LOGGING AND TRANSPORT: GENERAL**

- 311 Planning of logging operations
- 312 Descriptions of individual logging operations [as distinct from the individual phases of logging, for which see 32]
- 319 Miscellaneous

#### **32 FELLING AND RELATED OPERATIONS**

[For performance measurements see 35; equipment etc. see 36]

- 321 Marking
- 322 Preparatory measures other than marking. Felling season
  - 322.1 Felling season
  - 322.2 Measures to reduce moisture content of the wood

- 322.3 Measures to facilitate barking. Chemical barking
- 322.4 Measures to reduce fungus and insect attack
- 322.5 Lopping and topping in advance of felling; removal of buttresses etc.
- 322.6 Clearing felling areas of obstacles; “pre-logging”
- 322.9 Miscellaneous
- 323 Felling and subsequent primary conversion
  - 323.1 Felling
    - 323.11 With axe and hand saw
    - 323.12 With machine saws
    - 323.13 With other machines
    - 323.19 Miscellaneous
  - 323.2 Trimming (“limbing”)
  - 323.3 Marking for cross-cutting. Measurement. [For mensurational methods see 5]
  - 323.4 Cross-cutting
  - 323.5 Barking
  - 323.6 Cleaving
  - 323.7 “Nosing” logs for skidding
  - 323.8 Rough hewing. Hand sawing
  - 323.9 Miscellaneous
- 324 Stacking
- 325\* Sorting and assortments of wood in the rough. [For purely industrial aspects the subheads of 8 may be used]
- 326 Sequence of operations (including, e.g., felling instructions, traditional order of operations, primary conversion after extraction, composition of gangs, one-man work in logging)
- 327 Inventory and control of fellings and of work in felling and related operations
- 329 Miscellaneous

### **33 DEGREE OF UTILIZATION AND WASTE. CLEARING THE FELLING SITE**

- 331 Degree of utilization and waste: general
  - 331.1 Biomass (whole tree harvesting)
  - 331.2 Crown wood
  - 331.3 Branch wood
  - 331.4 Bark
  - 331.5 Litter
- 332 Clearing the felling site
  - 332.1 Re-logging
  - 332.2 Disposal of snags and stumps
  - 332.3 Slash disposal (smaller material)
  - 332.4 Clearing sites for uses other than forestry
  - 332.9 Miscellaneous
- 333 Harvesting of small wood (e.g. from tending operations)
  - 333.3 Chipping. Energy wood [outside the forest see 825.71 and 839.3]
- 334 Salvage fellings
- 339 Miscellaneous

### **34 STORAGE OF WOOD IN THE FOREST AND AT LOG DUMPS (“LANDINGS”)**

[At mills and timberyards see 848]

## **35 PERFORMANCE MEASUREMENTS FOR DETERMINING PIECE RATES IN FELLING AND RELATED OPERATIONS**

- 352 Performance studies in felling and related operations
- 353 Performance tables, wage tariffs and piece rates
- 355 Statistics of performance and earnings; comparisons of performance
- 356 Conditions affecting work (weather, site, stand, type of wood etc.)
- 359 Miscellaneous

## **36 TOOLS, MACHINES AND EQUIPMENT FOR FELLING AND RELATED OPERATIONS**

- 360 Felling and logging machines: general (harvesters, processors, etc.)
- 361 Barking tools and machines
  - 361.0 General. Theory of bark removal
  - 361.2 Barking irons or spuds
  - 361.3 Draw-knives, draw-shaves
  - 361.4 Tools for barking during the sap-flow period
  - 361.7 Barking machines
  - 361.8 Maintenance of barking tools and machines
  - 361.9 Miscellaneous
- 362 Sawing tools and machines
  - 362.0 General. Theory of sawing. Saw teeth
  - 362.1 One-man saws in general
  - 362.2 Bow-saws (including two-man bow-saws)
  - 362.3 One-man cross-cut saws (Fuchsschwanzsägen)
  - 362.4 Two-man cross-cut saws (Zugsägen)
  - 362.5 Ripsaws, pitsaws
  - 362.7 Power saws
  - 362.8 Saw maintenance
  - 362.9 Miscellaneous
- 363 Tools and machines for cutting (hewing) and cleaving
  - 363.0 General. Theory of cutting and cleaving
  - 363.1 Axes, adzes etc.
  - 363.2 Billhooks, machetes, knives, thinning shears
  - 363.3 Cleaving hammers
  - 363.4 Wedges
  - 363.5 Cleaving machines
  - 363.7 Chipping machines and brushwood cutters (chippers)
  - 363.8 Maintenance of cutters and cleavers
  - 363.9 Miscellaneous
- 364 Tools and equipment for handling wood
  - 364.1 Peavies, cant hooks
  - 364.2 Pickaroons, "Sappi" ("Sapine")
  - 364.5 Log levers and jacks (to prevent saw pinching when cross-cutting)
  - 364.6 Trestles
  - 364.7 Auxiliary equipment for felling and bringing down lodged trees ("hang-ups")
  - 364.9 Miscellaneous
- 365 Measuring and marking tools and equipment
  - 365.1 Paint guns etc. (for marking standing or felled trees)
  - 365.2 Bark-blazers, scribes, rissers (for marking standing or felled trees)
  - 365.3 Die-hammers, marking hammers etc.
  - 365.5 Calipers and gauges
  - 365.7 Measuring sticks, tree compasses, measuring strings and tapes etc.

- 365.8 Measuring sticks combined with calipers
- 365.9 Miscellaneous
- 367 Stump-grubbing tools and equipment. [For technique see 332.2]
- 367.0 General. Vertical versus horizontal pulling or levering
- 367.2 Manually-operated tripod stump-pullers
- 367.3 Manually-operated windlass stump-pullers
- 367.4 Other stump-grubbing machines
- 367.5 Other devices. [For explosives cross-reference to 381.1]
- 367.6 Auxiliary stump-grubbing equipment
- 367.9 Miscellaneous
- 369 Miscellaneous (e.g. faggot-binders, ladders, climbing equipment)

## **37 TRANSPORT**

- 371 Loading and unloading. [See 377.1 for equipment rather than methods]
- 372 Land and air transport: general. [See 377 and its subheads for literature on equipment rather than methods]
- 373 By chutes, slides, sledge-ways and flumes
- 373.0 General. Friction, gravity
- 373.2 Chutes and similar, but more or less improvised, installations: their construction and operation
- 373.3 Slides and sledge-ways: their construction and operation
- 373.4 Flumes: their construction and operation
- 373.9 Miscellaneous
- 374 By man and animals
- 374.1 By man
- 374.2 By animals: general
- 374.3 By horses, mules, donkeys
- 374.4 By oxen, buffaloes
- 374.6 By elephants
- 374.9 Miscellaneous (e.g. camels)
- 375 By mechanical methods, other than aircraft
- 375.1 By cable methods
- 375.11 Ground line and winch
- 375.12 Overhead lines
- 375.13 Letting down wood by hand-controlled cable (Abseilen)
- 375.2 By sledge
- 375.4 By tractor (wheeled or caterpillar)
- 375.5 By lorry (truck)
- 375.7 By forest railways
- 375.8 By public railways
- 375.9 Miscellaneous (e.g. air cushion vehicles)
- 376 By aircraft (Helicopter logging)
- 377 Equipment for loading and unloading, skidding and hauling [See preferably 371/376 and use the following subheads only for equipment as such]
- 377.1 Loading and unloading equipment
- 377.2 Cables and winches etc.
- 377.21 Cables
- 377.22 Winches
- 377.23 Engines
- 377.29 Miscellaneous
- 377.3 Sledges
- 377.31 Supporting one end of the logs (including skidding pans)
- 377.32 Supporting both ends of the logs (including paired sledges for this purpose)
- 377.33 With racks or containers for small wood

- 377.37 Motor sledges
- 377.39 Miscellaneous
- 377.4 Wheeled vehicles (including crawler tractors). [For railway vehicles see 377.72]
- 377.41 Logging arches and wheels (supporting one end of the logs)
- 377.42 Waggon and trailers for timber, supporting the logs at both ends (including semi-trailer vehicles)
- 377.43 Waggon and trailers for small wood (including handcarts, trolleys and barrows)
- 377.44 Tractors (wheeled or crawler)
- 377.45 Lorries (trucks)
- 377.49 Miscellaneous
- 377.7 Forest railways
- 377.71 Track
- 377.72 Rolling stock
- 377.73 Locomotives
- 377.79 Miscellaneous
- 377.8 Hand tools
- 377.9 Miscellaneous
- 378 Water transport
- 378.1 Getting wood into and out of the water
- 378.2 Bundling
- 378.3 Loose floating, driving and rafting of wood
- 378.31 Loose floating and driving
- 378.32 Loose floating and driving combined with rafting
- 378.33 Rafting: general
- 378.34 Rafting on inland waters
- 378.35 Rafting by sea
- 378.4 Problems of stranding, sinking etc. of timber
- 378.41/.43 Stranded timber
- 378.41 Measures to prevent stranding
- 378.42 Salvage of stranded timber
- 378.44/.46 Sunken timber
- 378.44 Measures to prevent sinking
- 378.45 Salvage of sunken timber
- 378.5 Sorting of timber floated jointly
- 378.7 Equipment, booms and installations in connection with floating and rafting. [For engineering structures see 386]
- 378.8 Transport by barges and boats; loading and unloading of barges and boats
- 378.9 Miscellaneous
- 379 Miscellaneous

## **38 FOREST ENGINEERING**

[For logging and transport methods and equipment see subheads of 37]

- 381 Materials
- 381.1 Explosives and their use
- 381.2 Constructional materials
- 381.9 Miscellaneous
- 382 Buildings
- 382.3 Logging camps. Huts and shelters for workers
- 382.4 Look-out towers
- 382.7 Staff and labour quarters
- 382.8 Stabling. Animal quarters
- 382.9 Miscellaneous
- 383 Roads and bridges. [For planning of road network see 686]
- 383.1 Permanent roads and their technical planning
- 383.2 Temporary roads and their technical planning (including snow and ice roads)
- 383.3 Grading
- 383.4 Road surfaces and their maintenance

- 383.6 Earth roads, mixed road surfaces and their maintenance
- 383.7 Machines and equipment
- 383.8 Bridges and culverts. Loading platforms etc.
- 383.9 Miscellaneous
  
- 384 Protective works, including torrent training [For other stream training, see 386]
  - 384.1 Against avalanches, landslips etc.
  - 384.2 Against erosion in general
  - 384.3 Torrent training
  - 384.9 Miscellaneous
  
- 385 Drainage, irrigation, sedimentation. Water supply [For silvicultural aspects see 237; for economic aspects see 651.7]
  - 385.1 Drainage
  - 385.2 Irrigation
  - 385.3 Sedimentation
  - 385.6 Water supply (wells etc.)
  - 385.9 Miscellaneous
  
- 386 Waterways, stream training: (Engineering aspects)  
[For torrent training see 384.3, for installations in connection with floating and rafting see preferably 378 and subheads; other aspects see 116.7]
  
- 387 Telecommunications e.g. transmission lines [cf. also 917]
  - 387.1 Mobile phones
  - 387.2 Wireless equipment, computer networks
  - 387.3 Global positioning systems (GPS)
  
- 389 Miscellaneous

## **39 MISCELLANEOUS**



## 4 FOREST INJURIES AND PROTECTION

### Primary subheads

- 41 General technique of forest protection. Types of injury
  - 42 Injuries from inorganic agencies (excluding fire)
  - 43 Forest fires
  - 44 Damage by harmful plants. Virus diseases
  - 45 Damage by animals
  - 46 Damage to tree growth by man
  - 48 Injuries due to unknown or complex causes (arranged by tree species)
  - 49 Miscellaneous
- 

### 41 GENERAL TECHNIQUE OF FOREST PROTECTION. TYPES OF INJURY

[For cross-reference as required]

- 410 General methodology for diagnosis and monitoring of damage and damage factors (DNA and visual analysis, microscopy etc.). Phytosanitary inspections.
- 411 Natural and biological control
  - 411.1 Natural enemies concerned in control
    - 411.11 Lower invertebrates
    - 411.12 Insects and other arthropods
    - 411.13 Amphibia and reptiles
    - 411.14 Birds
    - 411.15 Mammals
    - 411.16 Bacteria and fungi
    - 411.18 Virus diseases
    - 411.19 Miscellaneous
- 412 Silvicultural control
- 413 Physical and mechanical control
  - 413.1 Trapping, with simultaneous or subsequent destruction
  - 413.2 Direct destruction by shooting, picking, removal of plant or affected part etc.
  - 413.3 Direct destruction by heat, fire etc.
  - 413.4 Repulsion by physical or mechanical means; scaring
  - 413.5 Impedance by barriers; screens, guards etc. [For simple fencing see 451.4]
  - 413.9 Miscellaneous
- 414 Chemical control
  - 414.1 Protective preparations classified by their mode of action
    - 414.11 Poison baits (including attractants)
    - 414.12 Pesticides
    - 414.13 Growth regulators
    - 414.14 Repellents
    - 414.16 Auxiliary materials (diluent, adhesives etc.)
    - 414.19 Miscellaneous
  - 414.2 Application: methods and equipment
    - 414.21 Dusting
    - 414.22 Spraying
    - 414.23 Fumigation, generation of aerosols and smokes
    - 414.24 Surface coating (painting etc.)
    - 414.26 Plant injection
    - 414.27 Soil injection
    - 414.29 Miscellaneous

- 414.4 Side effects of chemical treatments including toxicity (e.g. on soil, wild and domestic animals)
- 414.9 Miscellaneous
- 415 Other means of control**
- 415.1 Integrated pest management
- 416 Types of injury**
- 416.1 To buds, leaves and shoots
- 416.11 Defoliation
- 416.12 Mining
- 416.13 Galls
- 416.14 Curls, distortions
- 416.15 Spots, discolorations
- 416.16 Wilts, die-back
- 416.17 Witches' brooms
- 416.19 Miscellaneous
- 416.2 To flowers, cones, fruits and seed
- 416.3 To roots and butt
- 416.4 To bark and cambium
- 416.5 To wood
- 416.9 Miscellaneous
- 419 Miscellaneous**
- 42 INJURIES FROM INORGANIC AGENCIES (EXCLUDING FIRE)**
- 421 Air currents**
- 421.1 Storms
- 421.2 Constant winds
- 422 Temperature influences. Insolation**
- 422.1 Frost and low temperature
- 422.11 Early frost
- 422.12 Late frost
- 422.13 Frost heaving
- 422.14 Soil freezing
- 422.15 Low winter temperature
- 422.18 Frost pockets etc.
- 422.19 Miscellaneous
- 422.2 Heat. Drought
- 422.3 Sun scorch
- 422.9 Miscellaneous
- 423 Precipitations**
- 423.1 Rain
- 423.2 Hoar-frost. Rime
- 423.3 Glazed ice
- 423.4 Snow
- 423.5 Avalanches
- 423.6 Hail. Congealed snowflakes
- 423.9 Miscellaneous
- 424 Soil conditions; erosion effects**
- 424.1 Erosion and deposition. Landslides etc.
- 424.2 Flooding. Waterlogging
- 424.4 Injuries due to salt
- 424.5 Injurious (e.g. toxic) constituents
- 424.6 Injuries due to fertilizers
- 424.7 Nutrient deficiencies. Chlorosis
- 424.9 Miscellaneous

- 425 Chemical influences (atmospheric). Pollution (chemical impacts of air-born pollutants. Pollution, Depositions)**
  - 425.1 Gases and suspended matter
    - 425.11 Acidic components
    - 425.13 Photooxidants and organic components
    - 425.19 Miscellaneous
  - 425.2 Salt spray
  - 425.3 Acid precipitation
  - 425.4 Metals
  - 425.9 Miscellaneous
- 426 Electrical and cosmic influences**
  - 426.1 Lightning
  - 426.2 Volcanic ash. Solid particles in the atmosphere. Dust
  - 426.4 Radioactivity
  - 426.9 Miscellaneous
- 429 Miscellaneous**
- 43 FOREST FIRES**
  - 430 Country reports incl. statistics**
  - 431 Predisposing factors and causes. Fire danger. Fire behaviour**
    - 431.1 Weather
    - 431.2 Nature and condition of combustible material
    - 431.3 Human agency and other causes
    - 431.4 Seasonal and other periodic variations
    - 431.5 Fire-danger rating. Current fire danger and forecasting of fire danger
    - 431.6 Types and behaviour of fires
    - 431.9 Miscellaneous
  - 432 Prevention and control**
    - 432.0 General preparedness and organization ("pre-suppression," general)
    - 432.1 Advance measures (to prevent fires, reduce fire danger or restrict fire spread)
      - 432.11 In regard to railways
      - 432.12 In regard to logging installations
      - 432.13 In regard to smokers and campers
      - 432.14 In regard to incendiarism
      - 432.15 In regard to other causes of fire
      - 432.16 Reduction of fire danger. [For controlled burning see 436 : 432.16]
      - 432.17 Use of permanent living firebreaks
      - 432.18 Use of permanent cleared firebreaks
      - 432.19 Miscellaneous
    - 432.2 Detection and reporting
      - 432.21 Look-out system [For construction of towers see 382.4]
      - 432.22 Ground patrols
      - 432.23 Aerial observation
      - 432.24 Use of reports from outside observers
      - 432.29 Miscellaneous
    - 432.3 Suppression
      - 432.31 Appraisal of situation and forces needed. Dispatch and transport of teams and supplies
      - 432.32 Plans of operation: strategy and tactics
      - 432.33 Basic methods of suppression
        - 432.331 Use of water, liquids, foam
        - 432.332 Use of soil and fire lines
        - 432.333 Beating or raking out etc.
        - 432.334 Counter-(back-)firing
        - 432.339 Miscellaneous
      - 432.34 Selection and mode of application of basic methods
      - 432.35 Auxiliary dispositions (e.g. lighting at night)
      - 432.36 Size, duties etc. of firefighting teams

- 432.37 Mopping up and patrolling
- 432.38 Analysis of action and results
- 432.39 Miscellaneous
- 432.9 Miscellaneous
- 433 Salvage and disposal of fire-damaged timber.** [Cross-reference to other appropriate heads]
- 434 Revegetation etc. of burnt areas.** [Cross-reference to other appropriate heads]
- 435 Benefits of fire control. Injurious effects of fire**
  - 435.1 Benefits of fire control: general
  - 435.2 Fire losses, fire damage to timber stands from the economic point of view
  - 435.3 Injuries to trees-types and effects
  - 435.4 Injuries to human life and property
  - 435.9 Miscellaneous. [Reference other injuries here, and cross-reference to appropriate subject]
- 436 Beneficial effects of fire. Uses of fire in silviculture and other forms of husbandry**  
 [These can best be subdivided by cross-reference, e.g. Burning in preparation for natural regeneration 436 : 231.322 Burning in preparation for artificial regeneration 437 : 232.213 Burning (controlled) to reduce fire danger 436 : 432.16 Burning for control of fungus diseases 436 : 443 etc.]
- 437 Effects on environment and ecology (of forest fires)**
- 439 Miscellaneous**
- 44 DAMAGE BY HARMFUL PLANTS. VIRUS DISEASES**
- 440 General matters. Predisposing factors and causes (including forecasting of outbreaks).**  
 [Cross-reference to other subdivisions of 44 as appropriate]
- 441 Forest weeds**
- 442 Parasitic (higher) plants. Climbers and epiphytes**
  - 442.1 Parasites e.g. Mistletoe
  - 442.2 Epiphytes
  - 442.3 Climbers
- 443 Fungi and bacteria**
  - 443.2 Diseases of seed and seedlings; damping off etc.
  - 443.3 Diseases of older stages
  - 443.4 Mycoplasma
- 444 Virus diseases**
- 449 Miscellaneous**
- 45 DAMAGE BY ANIMALS**
- 450 General matters. Predisposing factors and causes (including forecasting of outbreaks).**  
 [Cross-reference to other subdivisions of 45, as appropriate]
- 451 Mammals** [to subdivide refer to families under 14 or alternatively (as described under Rule 1d in the Introduction) numbers may be subdivided alphabetically by genus and species]
  - 451.1 Domestic mammals
  - 451.2 Wild mammals
  - 451.4 Fencing etc.
- 452 Birds**
- 453 Insects** [to subdivide refer to families under 14 or alternatively (as described under Rule 1d in the Introduction) numbers may be subdivided alphabetically by orders and families (Appendix C)]
- 454 Nematodes**
- 459 Other animals**

**46 DAMAGE TO TREE GROWTH BY MAN**

461 Logging damage

462 Injurious removal of produce

463 Damage by road construction

468 Damage by recreation

469 Miscellaneous

**48 INJURIES DUE TO UNKNOWN OR COMPLEX CAUSES (ARRANGED BY TREE SPECIES)**

**49 MISCELLANEOUS**



## 5 FOREST MENSURATION. INCREMENT; DEVELOPMENT AND STRUCTURE OF STANDS. SURVEYING AND MAPPING

### Primary subheads

- 51 Systems and units of measurement (including conversion tables)
- 52 Measurements of the stem dimensions and volume of trees, stands, forests and timber
- 53 Special measurements of trees and stands (crown dimensions, stand density, etc.)
- 54 Assessment of site quality
- 55 Age determination
- 56 Increment, Development of stand structure
- 57 Forest condition monitoring
- 58 Surveying and mapping. Aerial survey
- 59 Miscellaneous

---

### 51 SYSTEMS AND UNITS OF MEASUREMENT (INCLUDING CONVERSION TABLES)

- 511 **Metric system: general.** [Reference general conversion tables to British and American systems as 511(083.5) : 512]
- 512 **British and American systems: general**
- 513 **Other systems: general**
- 514 **Linear and area measures**
  - 514.1 Metric system
  - 514.2 British and American measures
  - 514.9 Miscellaneous
- 516 **Solid volume**
  - 516.1 Metric system
  - 516.11 True measure
  - 516.15 Trade (nominal, customary) measure
  - 516.19 Miscellaneous
  - 516.2 British and American measures
  - 516.21 True cu.-ft. measure etc.
  - 516.22 True bd.-ft. (super-ft.) measure etc.
  - 516.25 Hoppus (quarter-girth) measure
  - 516.26 Bd.-ft. measure by log rules. [For application to scaling see 526.6]
  - 516.29 Miscellaneous
  - 516.9 Miscellaneous
- 517 **Stacked volume.** [For converting factors see 527]
  - 517.1 Metric system
  - 517.2 British and American measures
  - 517.9 Miscellaneous
- 518 **Weight**
  - 518.1 Metric system
  - 518.2 British and American measures
  - 518.9 Miscellaneous
- 519 **Miscellaneous**

## **52 MEASUREMENTS OF THE STEM DIMENSIONS AND VOLUME OF TREES, STANDS, FORESTS AND TIMBER**

### **521 Diameter (girth) and sectional area**

- 521.1 Diameter (girth): general
- 521.2 At breast height
  - 521.21 Of single stems
  - 521.22 Of groups or stands. Mean diameter
  - 521.23 Effects of eccentricity of section
  - 521.24 Effects of rounding off exact values to particular intervals
  - 521.25 Effects of errors in actual measurement
  - 521.26 Determination in presence of root swelling, buttresses etc.
  - 521.27 Estimation from stump measurements
  - 521.29 Miscellaneous
- 521.3 At other positions
  - 521.32 Mid-diameter (mid-girth)
    - 521.321 Tables
    - 521.329 Miscellaneous
  - 521.39 Miscellaneous
- 521.5 Sectional area: general
  - 521.51 Tables
  - 521.6 Basal area (sectional area at breast height)
    - 521.61 Of single stems
    - 521.62 Of groups or stands. Mean basal area. Angle count method (relascope). Point sampling. [Cf. also 524.63]
    - 521.69 Miscellaneous
  - 521.7 Sectional area at other positions
  - 521.9 Miscellaneous

### **522 Height, length**

- 522.1 Of felled trees
- 522.2 Of individual standing trees
- 522.3 Of groups and stands (mean height)
- 522.31 Height curves and tables

### **523 Bark (including bark increment)**

- 523.1 Thickness
- 523.2 Form, variation in thickness with position on stem
- 523.3 Volume. Bark %
- 523.9 Miscellaneous

### **524 Determination of the volume of trees and stands**

- 524.1 Principles of volume determination. Form (Taper)
- 524.11 Geometrical solids and volume formulae based on these. Mathematical, mechanical and other expressions of form. [Cf. also 524.314]
- 524.12 Form factors and form height
  - 524.121 Tables
- 524.13 Form quotient and form classes. Form point
  - 524.131 Tables
- 524.14 Taper expressed as a gradient
- 524.15 Form of particular portions of the stem (top, root swelling etc.)
- 524.18 Form of branches
- 524.19 Miscellaneous
- 524.2 Volume of single trees
- 524.3 Volume of tree groups and stands (e.g. sample plots)  
[Include under this head methods of finding the volume of individual sample areas, but for recording procedure and for arrangement, shape and size of sample areas etc. see under 524.4 and 524.6]
- 524.31 Principles. Formulae and tables etc.
  - 524.311 Principles
  - 524.314 Empirical volume formulae. [Cf. also 524.11]



- 524.315 Volume tables and their construction
- 524.319 Miscellaneous
- 524.32 Volume as determined by felling
- 524.33 Volume based on all trees but without selection of sample trees
- 524.34 Volume based on all trees plus sample-tree data. Mean-tree methods
- 524.36 Volume based on area and past felling records
- 524.37 Volume based on area and yield-table data
- 524.38 Ocular estimation
- 524.39 Miscellaneous
- 524.4 Recording of data. Organization of measuring parties and their work
- 524.41 Methods of recording data (tallies etc.)
- 524.46 Organization of measuring parties and their work
- 524.6 General surveys of forests and tracts of forest. Partial enumeration surveys, timber cruising
- 524.61 Large-scale (regional) "forest surveys" (general descriptions and methods). [For aerial surveys and remote sensing see 585; for results see 905.2]
- 524.62 Enumeration surveys of smaller areas
- 524.63 Sampling methods including point sampling [Cf. also 521.62]
- 524.631 Intensity, % of area sampled
- 524.632 Surveys based on strips
- 524.633 Surveys based on both strips and plots
- 524.634 Surveys based on plots
- 524.635 Size of sampling units (plots)
- 524.636 Shape of sampling units (plots)
- 524.637 Accuracy, reliability
- 524.639 Miscellaneous
- 524.69 Miscellaneous
- 524.9 Miscellaneous
- 525 Volume by assortments. Merchantable volume**
- 525.1 Volume by assortments. Probable outturn in terms of particular products. Assortment volume tables
- 525.5 Merchantable dimensions and volume. Actual versus nominal outturn (including Ernteverlust) Deductions for defect etc.
- 525.9 Miscellaneous
- 526 Log measurement. "Scaling"**
- 526.1 Measurement by weight
- 526.11 Weight tables
- 526.2 Volume by displacement of water etc.
- 526.5 Volume by formula
- 526.51 Based on top diameter
- 526.52 Based on mid-diameter or mean of top and butt diameters
- 526.53 Based on butt diameter
- 526.54 Measurement by sections
- 526.59 Miscellaneous
- 526.6 Volume by log rules
- 526.7 Conversion from one method to another
- 526.9 Miscellaneous
- 527 Solid volume of stacked products (including converting factors).** [For units of stacked volume see 517]
- 529 Miscellaneous**

## **53 SPECIAL MEASUREMENTS OF TREES AND STANDS (CROWN DIMENSIONS, STAND DENSITY ETC.)**

- 531 Crown dimensions, crown area, crown volume, crown ratio
- 532 Quantity and area of foliage
- 533 Crown density of stands
- 535 Density of stocking (by number of trees, basal area, volume etc.; both relative and absolute)
- 536 Surface area of stem and/or branches
- 537 Measurement of biomass (dry matter production)
- 539 Miscellaneous

## **54 ASSESSMENT OF SITE QUALITY** [For soil and biological aspects see 114.5]

- 541 Based on height, diameter, volume etc.
- 542 By ecological methods
- 546 Changes of site quality
- 547 Relation of forest site quality to the production of wood
- 548 Relation of forest site quality to total production of vegetable matter
- 549 Miscellaneous

## **55 AGE DETERMINATION**

- 551 In single trees with annual rings
- 552 In groups and stands with annual rings
- 553 In species having irregular or no growth rings
- 559 Miscellaneous

## **56 INCREMENT; DEVELOPMENT AND STRUCTURE OF STANDS**

[For biological aspects see 181.6 and 228]

### **560 General matters (including sampling methods in increment determination)**

#### **561 Increment in height, diameter, basal area, form and quality**

- 561.1 Height increment
- 561.2 Diameter (girth) and basal-area increment
- 561.21 Diameter (girth) increment: general
- 561.22 Sampling with increment borers
- 561.23 Handling and examination of increment cores
- 561.24 Variations and trends. Dendrochronology
- 561.25 Basal-area increment
- 561.26 Stem analysis [Cf. 562.16]
- 561.27 Stump analysis [Cf. 562.17]
- 561.29 Miscellaneous
- 561.3 Form increment
- 561.5 Quality increment
- 561.6 Increment %
- 561.9 Miscellaneous

#### **562 Volume increment**

- 562.1 Of single trees
- 562.16 Stem analysis [Cf. 561.26]
- 562.17 Stump analysis [Cf. 561.27]
- 562.2 Of groups and stands
- 562.21 Gross increment and net change
- 562.22 Mortality and thinnings

- 562.23 Recruitment
- 562.4 Of groups and stands: methods of determination
- 562.41 By single measurement of sample trees
- 562.42 Méthode du contrôle. [For use in yield regulation see 62]
- 562.45 Other methods involving direct measurement
- 562.46 Indirect assessment (e.g. from yield tables)
- 562.49 Miscellaneous
- 562.9 Miscellaneous
- 563 Increment determination in species having irregular or no growth rings
- 564 Forecasting increment
- 565 Sample-plot technique
- 566 Yield tables and their construction. Yield models [For money yield tables see 653; for assortment yield tables cross-reference to 525.1]
- 567 Stand tables
- 568 Other mensurational studies of stand constitution and changes therein. Distribution of growth by tree classes etc.
- 569 Miscellaneous

## **57 FOREST CONDITION MONITORING**

### **571 Sampling design, selection criteria, representativity**

### **572 Sample tree**

- 572.1 Assessment of crown condition
- 572.2 Assessment of defoliation
- 572.3 Assessment of discolouration
- 572.4 Assessment of mortality
- 572.9 Miscellaneous

### **573 Assessment of stem and crown damage**

- 573.1 Assessment of biotic damage
- 573.2 Assessment of abiotic damage
- 573.9 Miscellaneous

## **58 SURVEYING AND MAPPING. AERIAL SURVEY**

### **581/584 Ground surveys**

- 581 Field work
- 582 Mapping. Technique of drawing-office and subsequent work
- 583 Application of maps to special purposes
- 584 Miscellaneous

### **585 Aerial reconnaissance and survey: general. Remote sensing**

- 586 Aircraft, crew, flying conditions etc.
- 587 Aerial photography and photogrammetry. Satellites.
  - 587.1 Photographic technique and equipment
  - 587.2 Interpretation of photographs: general
  - 587.3 Preparation of mosaics and maps
  - 587.5 Applications in forest mensuration. [Cross-reference to appropriate heads]
  - 587.6 Application to other forestry purposes
  - 587.7 Applications in vegetation and land-use surveys
  - 587.9 Miscellaneous
- 588 Visual reconnaissance

### **589 Miscellaneous**

## **59 MISCELLANEOUS**



## **6 FOREST MANAGEMENT. BUSINESS ECONOMICS OF FORESTRY. ADMINISTRATION AND ORGANIZATION OF THE FOREST ENTERPRISES**

### **Primary subheads**

- 61 Forest management: general, theory and principles**
  - 62 Methods of management. Working plans (Short and long term). Annual or periodic yield. Yield regulation**
  - 63 Other forest management questions**
  - 64 Forestry as a business; general**
  - 65 Special business problems of timber-growing**
  - 66 Costing of logging operations**
  - 67 Assessment of financial results; book-keeping and accountancy; business statistics; short-term planning and financing**
  - 68 Administration and organization of forest enterprises**
  - 69 Miscellaneous**
- 

### **61 FOREST MANAGEMENT: GENERAL, THEORY AND PRINCIPLES**

- 611 Theory; sustained yield; progressive yield; sustainable forest management
- 612 Theory of growing stock and its relation to increment and yield (modelling, forest models)
- 613 Exploitability and rotation; short rotation forestry [see also 238]
- 614 Constitution and spatial arrangement of crop; choice of species and silvicultural systems in this respect; area, location and sequence of fellings-felling series, cutting sections etc.
- 615 Division of the area: forest and non-forest land; working circles and compartments etc.
- 618 Reserves of timber
- 619 Miscellaneous

### **62 METHODS OF MANAGEMENT. WORKING PLANS (SHORT AND LONG TERM). ANNUAL OR PERIODIC YIELD, YIELD REGULATION**

- 621 Preliminary reports and reconnaissance**
- 622 General description. Description of site and stand**
- 624 Methods of management. Planning**
  - 624.1 Assessment of annual or periodic yield; yield regulation including allowable cut [For Working plans see also 628]
  - 624.2 Planning of growing stock (quantity and composition)
  - 624.3 Planning of particular measures (regeneration, afforestation, tending, conversion etc.)
  - 624.4 Planning to minimize injuries
  - 624.5 Criteria and indicators (for sustainable forest management)
  - 624.6 Participatory planning
  - 624.9 Miscellaneous
- 625 Control**
- 626 Revision**
- 627 Working plans for special conditions**
  - 627.1 Protection forests
  - 627.2 Demonstration and experimental forests

- 627.3 Recreational forests etc.
- 627.5 Ecosystem management
- 627.9 Miscellaneous

**628 Actual, working plans**

**629 Miscellaneous**

**63 OTHER FOREST MANAGEMENT QUESTIONS**

[For forest surveying and mapping see 58]

**631 Management of wilderness areas etc.**

**633 Forest certification**

**64 FORESTRY AS A BUSINESS: GENERAL**

[For economics of particular cases, e.g. Christmas trees, plant and seed production, shooting etc., cross-reference to appropriate heads elsewhere in the classification]

**641 Theory, methods, systems, development**

**642 Business peculiarities of timber-growing and logging**

**643 Classification of forest enterprises, their basic economic units and types of economic management**

**644 Significance and influence of various features of the enterprise and its parts**

644.1 Site quality

644.2 Growing stock (quantity, quality, structure)

644.3 Location (relation to demand for products, transport facilities, labour supply etc.)

644.4 Size of enterprise or working unit

644.5 Form of ownership; combination with other branches of husbandry or industry

644.6 Forms of enterprise (especially the relation of the forest owner to logging operations), contract systems

644.7 Prices and wages (their relative and absolute levels, variations and trends)

644.8 Economics of tree improvement

644.9 Miscellaneous, e.g. forest rights (servitudes) etc. [Cf. 935.5]

**646 Interest and the calculation of interest**

**648 History and general accounts of forest businesses, forms of ownership, groups of businesses etc.**

**649 Miscellaneous**

**65 SPECIAL BUSINESS PROBLEMS OF TIMBER-GROWING**

**651 Calculation of costs and profitability (i.e. cost benefit analysis)**

651.1 Theory and methods; costs and returns

651.2 Soil rental (Bodenrente), forest rental (Waldrente), profitability, of the forest (Waldrentabilität)

651.3 Indicating %

651.4 Mean annual forest %

651.5 Calculations of rotation

651.6 Production costs of standing timber

651.7 Costs and profitability of particular measures

651.71 Economic choice of species

651.72 Different methods of regeneration

651.73 Brashing and pruning

651.74 Thinning

651.75 Other tending operations

651.76 Management for non-wood products

651.78 Drainage

651.79 Miscellaneous

651.9 Miscellaneous

**652 Forest valuation**

- 652.1 Theory and methods, different categories of value
- 652.2 Value of the soil (land) in general
- 652.3 Value of the growing stock (stand) in general
- 652.4 Value of the forest in general
- 652.5 Valuation for particular purposes
  - 652.51 For sale and purchase. Stumpage
  - 652.52 For taxation purposes
  - 652.53 In cases of expropriation
  - 652.54 In cases of damage and compensation for damage
  - 652.55 For balance-sheet purposes
  - 652.56 For social purposes (e.g. recreation)
  - 652.57 Nature conservation
  - 652.58 Forest concessions
  - 652.59 Miscellaneous
- 652.9 Miscellaneous

**653 Value increment of the stem; development and structure of the stand as regards value****654 Determination of the objects of business management****655 Value of non-wood products****656 Value of cultural heritage, landscape. Conservation costs****659 Miscellaneous****66 COSTING OF LOGGING OPERATIONS****661 Theory and methods, costs and returns****662 Costs of different phases of work (cost items)**

- 662.1 Overhead costs and their distribution
- 662.2 Felling costs
- 662.3 Extraction costs. [For longer-range transport see 78 and its subheads]
- 662.4 Costs of log dumps ("landings"), timber storage costs etc.
- 662.9 Miscellaneous

**663 Different kinds of cost (of logging operations)**

- 663.1 Wages and salaries
- 663.2 Depreciation and interest. Costs of the various capital installations and equipment for logging operations
  - 663.21 Tools and implements
  - 663.22 Draught animals
  - 663.23 Sledges, carts etc.
  - 663.24 Motor lorries (trucks) and tractors
  - 663.25 Temporary roads for the transport of wood
  - 663.26 Permanent roads and other transport installations
  - 663.27 Buildings
  - 663.29 Miscellaneous
- 663.4 Losses during transport and storage
- 663.9 Miscellaneous

**664 Costs of particular assortments of wood****665 Influence of stem and log size on costs****666 Influence of particular forms of management and silvicultural systems on costs****667 Budgeting and reviewing of costs****669 Miscellaneous**

## **67 ASSESSMENT OF FINANCIAL RESULTS; BOOK-KEEPING AND ACCOUNTANCY; BUSINESS STATISTICS; SHORT-TERM PLANNING AND FINANCING**

**671**     **Income, returns; expenditure, outlay; surplus, profit; costs of permanent administrative arrangements**

**672**     **Assessment of financial results; balancing**

672.1     Capital assets and their valuation (money, bills; timber stocks; tools, implements, machines; installations for communication; transport installations and buildings; forest land; growing stock; soil improvements etc.)

672.2     Balance of growth or calculated yield with cutting and mortality

672.3     Reserve funds, sinking funds

672.9     Miscellaneous

**673**     **Book-keeping**

673.1     For the whole forest business in general

673.2     For logging operations

673.9     Miscellaneous

**674**     **Business statistics**

674.1     Theory and methods

674.2     Data

**676**     **Financing**

676.1     Of particular measures

676.11    Forest improvements

676.12    Provision etc. of machines, buildings, transport installations

676.13    Logging operations

676.19    Miscellaneous

676.2     Different methods of financing (out of income, savings, sinking funds, credit, subsidies)

676.4     Certification and conservation

676.9     Miscellaneous

**677**     **Short-term planning and budgeting**

**679**     **Miscellaneous**

## **68 ADMINISTRATION AND ORGANIZATION OF FOREST ENTERPRISES**

**681**     **National (federal, state) forest services and administration**

681.1     Position among and relation to government departments

681.2     Structure. Administrative branches and units

681.3     Staff: establishment: ranks and categories

681.4     Staff: conditions of service, responsibilities etc.

681.7     Administrative procedure

681.9     Miscellaneous

**682**     **Private forest administration. Staff questions in private forestry**

**683**     **Office organization**

**684**     **Labour management**

**685**     **Planning and organization of telecommunications.** [For engineering aspects see under 387]

685.1     Telephonic and telegraphic

685.2     Radio

685.3     Visual

685.4     Computers, networks

685.9     Miscellaneous

**686**     **Planning and organization of buildings, transport installations (roads etc.).** [For engineering aspects see under 383]

686.2     Buildings

686.3     Roads etc.



686.31 Permanent road system  
686.32 Temporary roads  
686.33 Extraction lanes, rides etc.  
686.34 Inspection paths  
686.39 Miscellaneous  
686.9 Miscellaneous

**687 Planning and organization of the transport of men, supplies and equipment**

687.1 Land transport  
687.2 Water transport  
687.3 Air transport  
687.9 Miscellaneous

**689 Miscellaneous**

**69 MISCELLANEOUS**



## **7 MARKETING OF FOREST PRODUCTS. ECONOMICS OF FOREST TRANSPORT AND THE WOOD INDUSTRIES**

[Including minor forest products, for which cross-reference, if desired, to the product concerned]

### **Primary subheads**

- 71 Marketing of forest products: general**
  - 72 The quantitative aspect of marketing; demand and supply**
  - 73 Prices**
  - 74 Trade policy (other than trade customs and usages)**
  - 75 Trade customs and usages**
  - 76 Accountancy; business planning and administration in marketing**
  - 77 Marketing; miscellaneous**
  - 78 Economics of forest transport**
  - 79 Economics of the forest products industries**
- 

### **71 MARKETING OF FOREST PRODUCTS: GENERAL**

- 711 Theory, methods, systematics. Market research in general
- 712 History and general accounts of businesses, self-contained units of businesses and groups of businesses
- 713 Classification of markets geographically and by assortments
- 714 Organizations, businesses (firms, brokers etc.)
- 717 Reviews of individual markets
- 718 Influence of competition from other products
- 719 Miscellaneous

### **72 THE QUANTITATIVE ASPECTS OF MARKETING; DEMAND AND SUPPLY**

#### **721 Domestic markets**

- 721.1 Demand, consumption; supplies (including potential supplies) and stocks
- 721.2 Seasonal variations
- 721.3 Business cycles
- 721.4 Trends
- 721.5 Other trade variations
- 721.9 Miscellaneous

#### **722 International markets**

- 722.1 Demand, consumption: supplies and stocks; imports and exports [For duties see 742.3]
- 722.2 Seasonal variations
- 722.3 Business cycles
- 722.4 Trends
- 722.5 Other trade variations
- 722.9 Miscellaneous

### **73 PRICES**

- 731 General; theory etc.
- 732 Price levels of different regions
- 733 Seasonal variations

- 734 Business cycles
- 735 Trends
- 736 Other variations
- 737 Price structure in relation to species and assortments
- 738 Stumpage
- 739 Miscellaneous

## **74 TRADE POLICY (OTHER THAN TRADE CUSTOMS AND USAGES)**

### **741 Trade policy, domestic**

- 741.0 Socialization, nationalization
- 741.1 Demand and consumption, government and private regulation of
- 741.2 Supply, government and private regulation of
- 741.3 Prices, government and private regulation of
- 741.4 Demand and supply, organization of (cartels, trusts, mergers etc.)
- 741.5 Information services
- 741.9 Miscellaneous

### **742 Trade policy, international**

- 742.1 Agreements
  - 742.11 State
  - 742.12 Private
- 742.2 Subsidies
- 742.3 Duties
  - 742.31 Import duties
  - 742.32 Export duties
  - 742.33 Transit duties
- 742.4 Permits, bans, quotas and other restrictions
  - 742.41 Forest certification
- 742.5 International organization
- 742.6 Information services
- 742.9 Miscellaneous

## **75 TRADE CUSTOMS AND USAGES [For grading see 85]**

- 751 General
- 752 Blank forms
- 753 Methods of sale (e.g. auction, tender)
- 754 Quantities and measurement
- 755 Time of delivery
- 756 Form and place of delivery (e.g. sale standing or felled, c.i.f., f.o.b. etc.)
- 757 Payment
- 759 Miscellaneous

## **76 ACCOUNTANCY, BUSINESS PLANNING AND ADMINISTRATION IN MARKETING**

- 761 Costs and costing
- 762 Assessment of financial results. Balancing. Balance sheets
- 763 Book-keeping
- 764 Business statistics
- 765 Pricing

- 766 Financing
- 767 Planning, budgetting
- 768 Administration of businesses and firms
- 769 Miscellaneous

## **77 MARKETING: MISCELLANEOUS**

## **78 ECONOMICS OF FOREST TRANSPORT**

[For economics of logging see 66/67; for different methods of transport cross-reference to subdivisions of 37; for business statistics of logging operations see 674]

### **781 General**

- 781.1 Theory, methods, systematics
- 781.2 History, monographs and general accounts of businesses, firms and groups of businesses
- 781.3 Geographical considerations
- 781.4 Organizations: businesses, firms, cartels, associations etc.
- 781.9 Miscellaneous

### **782 Quantities transported; their variations and trends**

### **783 Tariffs, freights**

### **784 Transport policy and other aspects of social economics in transport** (except those included in 782/783)

- 784.2 Ownership policy; socialization, nationalization
- 784.3 Public regulation and supervision. Legislation
- 784.4 Other methods of implementing policy
  - 784.41 Subsidies
  - 784.42 Credits
  - 784.43 Insurance (including the business economics of insurance)
  - 784.49 Miscellaneous
- 784.9 Miscellaneous

### **785 Business practices and usages in transport**

- 785.1 Obligations of purchaser and vendor
- 785.2 Forwarding, forwarding agencies
- 785.3 Chartering, shipping documents. Shipbrokers
- 785.9 Miscellaneous

### **786 Accountancy, business planning and administration of transport**

- 786.1 Costs and costing
- 786.2 Assessment of financial results. Balancing. Balance sheets
- 786.3 Book-keeping
- 786.4 Business statistics
- 786.6 Financing
- 786.7 Planning, budgetting
- 786.8 Administration of businesses and firms
- 786.9 Miscellaneous

### **788 Ports, harbours**

- 788.1 General descriptions of ports and harbours
- 788.2 Port customs and usages
- 788.3 Stevedoring. Loading and unloading
- 788.4 Storage in ports
- 788.9 Miscellaneous

- 789 Miscellaneous

## **79 ECONOMICS OF THE FOREST PRODUCTS INDUSTRIES**

[For the different industries cross-reference to subdivisions of 8]

### **791 Economics of the forest products industries: General.** [For general statistics use 791(083.4)]

- 791.1 Theory, methods, systematics
- 791.2 History. Monographs and general accounts of businesses, firms and groups of businesses
- 791.3 Geographical considerations
- 791.4 Organizations: businesses, firms, cartels, associations etc.
- 791.9 Miscellaneous

### **792 Output of the forest products industries; its variations and trends**

### **794 Industrial policy and other aspects of social economics in the forest products industries (except those included in 792)**

- 794.2 Ownership policy; socialization, nationalization
- 794.3 Public regulation and supervision. Legislation
- 794.4 Other methods of implementing policy
  - 794.41 Subsidies
  - 794.42 Credits
  - 794.43 Insurance (including the business economics of insurance)
  - 794.49 Miscellaneous
- 794.9 Miscellaneous

### **796 Accountancy, business planning and administration in the forest products industries**

- 796.1 Costs and costing
- 796.2 Assessment of financial results. Balancing. Balance sheets
- 796.3 Book-keeping
- 796.4 Business statistics
- 796.5 Pricing
- 796.6 Financing
- 796.7 Planning, budgeting
- 796.8 Administration of businesses and firms
- 796.9 Miscellaneous

### **799 Miscellaneous**

## 8 FOREST PRODUCTS AND THEIR UTILIZATION

### Primary subheads

- 81 Wood and bark: structure and properties
  - 82 Conversion, shaping, assembly and finishing of wood: general
  - 83 Timber manufacturing industries and products. Uses of wood as such
  - 84 Preservative and other treatments to improve the properties of wood. Damage by biological agencies and its control. Seasoning. Timberyard practice (handling and storage)
  - 85 Grading of wood and wood products
  - 86 Pulp industries. Composite materials made wholly or partly from woody matter. Chemical utilization of wood
  - 88 Economy in the use of wood. Replacement by competitive materials
  - 89 Other (minor) forest products
- 

### 81 WOOD AND BARK: STRUCTURE AND PROPERTIES

- 810 **General information on woods.**  
[Including monographs of individual wood species or groups of species. Subdivide by geographical numbers (1/9) and by species, under 174/176, as cross-references or as described under rule 1(d) in the introduction]
- 811 **Structure. Identification**
  - 811.1 Anatomical elements and tissues
    - 811.11 The cell
      - 811.112 Shape, dimensions etc.
      - 811.115 Cell contents
      - 811.119 Miscellaneous
    - 811.12 Cell wall
      - 811.126 Pits
    - 811.13 Cambium
    - 811.14 Vessels
      - 811.141 Perforation plates
      - 811.142 Grouping and arrangement
      - 811.143 Size and number, and length of segments
      - 811.144 Contents
      - 811.149 Miscellaneous
    - 811.15 Tracheids and fibres
      - 811.151 Tracheids
        - 811.152 Shape, dimensions
        - 811.153 Ray tracheids
        - 811.154 Tracheids: miscellaneous
      - 811.155 Fibres
        - 811.156 Shape, dimensions
        - 811.158 Gelatinous fibres
        - 811.159 Fibres: miscellaneous
    - 811.16 Rays and parenchyma
      - 811.161 Rays
      - 811.164 Parenchyma
      - 811.169 Miscellaneous
    - 811.17 Pith
    - 811.18 Xylem
    - 811.19 Miscellaneous
  - 811.2 Special features and abnormal structure (anatomical aspects). [For grading aspects see 85 and its subheads]

- 811.21 Storeyed structure
- 811.22 Reaction wood
- 811.24 Secretory elements
- 811.25 Intercellular canals and spaces
- 811.27 Pith flecks
- 811.28 Phloem elements in wood
- 811.281 Included phloem
- 811.282 Internal phloem
- 811.29 Miscellaneous
- 811.4 Growth rings. [Cf. also 811.2 and 815.2. See 561.24 for dendrochronology]
- 811.41 Early (spring) wood
- 811.42 Late (summer) wood
- 811.49 Miscellaneous
- 811.5 Sapwood and heartwood
- 811.51 Sapwood
- 811.52 Heartwood
- 811.53 Juvenile wood
- 811.54 Adult wood
- 811.59 Miscellaneous
- 811.6 Texture, grain, figure
- 811.61 Texture
- 811.64 Grain
- 811.67 Figure
- 811.69 Miscellaneous
- 811.7 Phloem; bark [For bark products see 892.4]
- 811.71 Primary phloem
- 811.72 Secondary phloem
- 811.73 Dilatation
- 811.79 Miscellaneous
- 811.9 Miscellaneous
- 812 Physical and mechanical properties**
- 812.1 Optical, acoustic, frictional, thermal and electrical properties
- 812.11 Optical properties
- 812.111 Colour
- 812.115 Lustre
- 812.119 Miscellaneous
- 812.12 Acoustic properties
- 812.13 Frictional properties
- 812.14 Thermal properties
- 812.141 Conductivity and diffusivity
- 812.142 Expansion and contraction
- 812.143 Ignition and combustion. Fire resistance. [For chemical aspects see 813.4; fireproofing see 843]
- 812.144 Calorific value
- 812.145 Specific heat
- 812.149 Miscellaneous
- 812.15 Electrical properties
- 812.151 Conductivity
- 812.152 Dielectric constant and loss
- 812.159 Miscellaneous
- 812.2 Behaviour with liquids and gases
- 812.21 Moisture relations [For seasoning see 847]
- 812.210 Moisture measurement (methods)
- 812.211 Moisture content
- 812.212 Fibre-saturation point
- 812.213 Equilibrium moisture content
- 812.214 Shrinkage and swelling
- 812.215 Seasoning stresses and sets. [Cf. also 847.8 Correction of seasoning defects and 852.3 Grading of seasoning defects]



- 812.219 Miscellaneous
- 812.22 Sorption of liquids and vapours other than water
- 812.23 Permeability; flow of liquids and vapours
- 812.231 Water and aqueous solutions
- 812.235 Other liquids
- 812.237 Vapours, gases
- 812.239 Miscellaneous
- 812.3 Density. Specific gravity. Buoyancy
- 812.31 Density. Specific gravity
- 812.35 Buoyancy
- 812.39 Miscellaneous
- 812.7 Strength properties: general. [For strength of joints, structures, boxes etc. cross-reference to the appropriate heads]
- 812.701 Elasticity
- 812.702 Plasticity
- 812.71 Bending
- 812.711 Static
- 812.712 Impact (including "toughness")
- 812.719 Miscellaneous
- 812.72 Compression
- 812.73 "Hardness" and abrasion
- 812.731 Resistance to indentation
- 812.732 Resistance to cutting
- 812.733 Resistance to abrasion
- 812.739 Miscellaneous
- 812.74 Shear
- 812.75 Cleavage
- 812.76 Tension
- 812.77 Torsion
- 812.78 Fatigue
- 812.79 Miscellaneous
- 812.791 Nail- and screw-holding properties
- 812.792 Bolt-bearing properties
- 812.799 Miscellaneous
- 812.8 Workability. Working properties. [For hardness see 812.73]
- 812.9 Miscellaneous

### **813 Wood chemistry**

- 813.1 Chief organic constituents. Constituents of the cell wall
- 813.11 Lignin
- 813.12 Carbohydrates. Holocellulose
- 813.13 Cellulose
- 813.14 Hemicelluloses
- 813.15 Pentosans
- 813.16 Hexosans
- 813.17 Polyuronides (including pectin)
- 813.19 Miscellaneous
- 813.2 Minor organic constituents. Extractives, xylitol, stanols
- 813.3 Ash constituents
- 813.4 Chemical effects of heat. Chemistry of thermal decomposition
- 813.5 Reaction with metals
- 813.6 Effect of chemicals on wood. Resistance to chemical attack
- 813.7 Odour and taste
- 813.8 Poisonous and irritant properties
- 813.9 Miscellaneous

### **814 Natural durability. Old wood. Fossilized wood**

- 814.1 Natural durability. Weathering [Fire resistance see 812.143 (untreated) and 843.4 (fireproofed timber); for resistance to chemicals see 813.6; for durability of preservative-treated timber see 841.4]

- 814.7 Old wood
- 814.8 Fossilized wood
- 814.9 Miscellaneous
- 815 Effect of growth factors on structure and properties.** [Cross-reference, where desirable, to the appropriate property]
- 815.1 Growth stresses
- 815.2 Variation with rate of growth
- 815.3 Variation with position in tree
- 815.31 Branchwood
- 815.32 Stemwood
- 815.33 Stumpwood
- 815.34 Rootwood
- 815.39 Miscellaneous
- 815.4 Influence of natural and artificial pruning. [Cross-reference, if necessary, to 181.63 and 245.1]
- 815.5 Influence of form of growth (spiral growth, forking etc.)
- 815.9 Miscellaneous

**819 Miscellaneous**

**82 CONVERSION, SHAPING, ASSEMBLY AND FINISHING OF WOOD:  
GENERAL**

[For logging see 32; for specific forms of industrial conversion see subheads of 83, cross-referenced to the following heads:-]

**821 Barking.** [For barking at the logging site see 323.5]

**822 Saws and sawing (description and investigations of individual machines and their functions)**

- 822.1 Methods of breaking down the log (quartering versus flat sawing etc.)
- 822.2 Hand saws and sawing. [For pit sawing, hand sawing in the forest, see subheads of 323]
- 822.3 Power saws and sawing, classified by constructional types of saw
- 822.31 Reciprocating saws other than frame saws
- 822.32 Frame saws
- 822.33 Circular saws
- 822.34 Band saws
- 822.39 Miscellaneous
- 822.4 Power saws and sawing, classified by the functions performed
- 822.41 Log cross-cutting saws [in the forest, see 362]
- 822.42 Other cross-cutters
- 822.45 Head saws, break(ing)-down saws
- 822.46 Other rip-saws; re-saws, edgers etc.
- 822.49 Miscellaneous
- 822.8 Blades and their maintenance
- 822.9 Miscellaneous

**823 Planing, cutting of mouldings. Chiselling, mortising and tenoning. Boring. Turning**

- 823.1 Planing. Cutting of mouldings
- 823.2 Chiselling. Mortising
- 823.3 Tenoning
- 823.4 Boring
- 823.5 Turning
- 823.7 Combined cutting actions
- 823.8 Cutters and their maintenance
- 823.9 Miscellaneous

**824 Forms of joint. Jointing and assembly**

- 824.1 Nailed
- 824.2 Screwed
- 824.3 Bolted
- 824.4 Dowelled

- 824.5 Timber connectors
- 824.6 Carpenters' and joiners' joints (dovetail etc.)
- 824.7 Glued joints
- 824.8 Glues and gluing
  - 824.81 Glues: general
    - 824.82 Natural glues
      - 824.821 Animal
      - 824.822 Blood albumin
      - 824.823 Casein
      - 824.824 Starch derivatives
      - 824.825 Vegetable proteins
      - 824.829 Miscellaneous natural glues
    - 824.83 Synthetic glues
      - 824.831 Melamine
      - 824.832 Phenolic
      - 824.833 Resorcinol
      - 824.834 Urea
      - 824.839 Miscellaneous (including acrylic, polyvinyl, polyurethane etc.)
    - 824.84 Metal-bonding glues
    - 824.85 Glues: miscellaneous
    - 824.86 Gluing: general
      - 824.87 Heating methods
        - 824.872 Steam and hot water
        - 824.873 Electrical methods: general
        - 824.874 Electrical resistance
        - 824.875 Radio-frequency
        - 824.876 Radiant heat
        - 824.879 Miscellaneous
      - 824.88 Effect of preservatives, fireproofing agents etc.
      - 824.89 Gluing: miscellaneous
    - 824.9 Miscellaneous

**825 Cleaving. Adzing. Mechanical comminution**

- 825.1 Cleaving. [At logging site see 323.6]
- 825.5 Adzing. [At logging site see 323.8]
- 825.7 Mechanical comminution
  - 825.71 Chipping [At logging site see 333.3]
  - 825.72 Flaking
  - 825.73 Grinding
  - 825.74 Defiberizing
  - 825.79 Miscellaneous
  - 825.9 Miscellaneous

**826 Peeling. Slicing. Trimming and edging of thin sheets**

- 826.1 Peeling
- 826.2 Slicing
- 826.5 Trimming and edging of thin sheets
- 826.9 Miscellaneous

**827 Bending. Moulding (other than by cutting)**

- 827.1 Bending
- 827.3 Moulding
- 827.9 Miscellaneous

**828 General carpentry and joinery. [See preferably subheads of 83]**

**829 Miscellaneous**

- 829.1 Finishing
  - 829.11 Bleaching
  - 829.12 Colouring
  - 829.13 Sanding
  - 829.14 Repair of holes

- 829.15 Surface filling and sealing
- 829.16 Polishing
- 829.17 Varnishing
- 829.18 Painting
- 829.19 Miscellaneous
- 829.9 Miscellaneous

### **83 TIMBER MANUFACTURING INDUSTRIES AND PRODUCTS. USES OF WOOD AS SUCH**

#### **831 Fuelwood and various types of rough timber**

- 831.1 Fuelwood (including use of fuel for cogeneration (electricity production))
- 831.2 Mining timber
- 831.3 Piles
- 831.4 Poles
  - 831.41 Telegraph and power transmission poles
  - 831.418 Cross-arms
  - 831.43 Flagmasts etc.
  - 831.45 Scaffolding
  - 831.48 Masts for boats and ships
  - 831.49 Miscellaneous
- 831.5 Posts. Stakes. Paling. Fences and gates. Miscellaneous agricultural and horticultural uses. [For agricultural structures see 833.4]
  - 831.51 Posts. Stakes
  - 831.52 Paling
  - 831.53 Fencing rails
  - 831.54 Gates
  - 831.59 Miscellaneous
- 831.6 Sleepers (ties)
- 831.7 Hewn timber
- 831.9 Miscellaneous (e.g. ladders and steps)

#### **832 Mills, their functions and products (excluding any in 833/839).** [For economics of the forest products industries see 79]

- 832.1 Sawmills and planing mills. [For sawing and planing machines and their functions see 822 and 823; for log storage and lumber yards see 848; for grading (including classification by size) of sawn timber see 85]
  - 832.10 Raw materials etc. Sawlogs
  - 832.11 Planning and lay-out. Power. Machinery
  - 832.12 Mill operation (including quality control)
  - 832.13 Transport and sorting within the mill
  - 832.14 Rationalization (general); organization of labour
  - 832.15 Output per unit (time unit, producing unit, raw-material unit) and factors affecting it (e.g. size and quality of logs); amount of waste
  - 832.16 Mobile ("portable") mills (general descriptions and studies)
  - 832.18 Products. [For by-products and waste cross-reference to 839.8]
  - 832.181\* Sawn wood (lumber) in general. [Cf. 854]
  - 832.182\* Planed timber in general. [Cf. 854]
  - 832.19 Miscellaneous
- 832.2 Veneer and plywood mills, including the manufacture of composite-wood assemblies. [For glues and gluing see 824.8; for individual machines and their functions see subdivisions of 82; for grading of veneer and plywood cross-reference subdivisions of 832.28 to those of 85]
  - 832.20 Raw materials etc. Veneer and plywood logs
  - 832.21 Planning and lay-out. Power. Machinery
  - 832.22 Mill operation (including quality control)
  - 832.23 Transport and sorting within the mill
  - 832.24 Rationalization (general); organization of labour
  - 832.25 Output per unit (time unit, producing unit, raw-material unit) and factors affecting it; amount of waste

- 832.28 Products
- 832.281 Veneer
- 832.282 Plywood
- 832.283 Blockboard
- 832.284 Sandwich materials
- 832.286 Composite-wood assemblies (laminated beams etc.)
- 832.287 Laminated veneer lumber (LVL)
- 832.288 Parallel strand lumber (PSL)
- 832.289 Miscellaneous
- 832.29 Miscellaneous
- 832.3 Match factories. [Subdivide, if necessary, like 832.21/.28]
- 832.4 Wooden-house factories. [Subdivide like 832.21/.28, and at 832.48 add the following subdivisions:-]
- 832.48 Wooden-house factories and manufacture: products
- 832.481 Prefabricated houses
- 832.482 Standardized parts of houses [for parts enumerated in 833, use those numbers or cross-reference to them]
- 832.489 Miscellaneous
- 832.5 Engineered wood / structural composites production facilities
- 832.8 Integrated mills and combinations of mills
- 832.9 Miscellaneous

**833 Timber in buildings and engineering structures (manufacture and use).** [Excluding any in 831] (For Civil and structural engineering aspects combine with appropriate numbers from UDC 624. For architectural aspects combine with UDC 69).

- 833.1 Building components and fittings: general
- 833.11 Foundations. Builders' rough planks etc.
- 833.12 Framing: general
- 833.121 Beams and girders
- 833.122 Columns, struts
- 833.123 Engineered wood products / Structural composites
- 833.13 Roofs. [For shingles see 834.1]
- 833.14 Walls and ceilings (incl. diaphragms)
- 833.15 Joinery. Finishings and fittings
- 833.151 Doors, door frames and linings, sills etc.
- 833.152 Windows, window frames, sills etc.
- 833.153 Fireplaces, radiators etc.
- 833.154 Lighting fitments and accessories
- 833.155 Architraves, picture rails, skirtings
- 833.156 Cupboards and shelves
- 833.157 Special kitchen fitments, draining boards etc.
- 833.158 Special bathroom and lavatory fitments
- 833.159 Miscellaneous
- 833.17 Porches, balconies etc.
- 833.18 Floors. Stairs and steps
- 833.19 Miscellaneous
- 833.2 Special uses in residential, commercial and public buildings
- 833.3 Special uses in factories and work-places (including laboratories). [For cooperage, vats and tanks see 834.3]
- 833.4 Special uses in agricultural structures
- 833.5 Wood in bridges, culverts etc. (including decking for bridges, piers etc.)
- 833.6 Wood in tunnels, subways etc.
- 833.7 Wood in roads and pavements
- 833.8 Wood in hydraulic, river and marine uses. [For piles see 831.3; for bridges and culverts see 833.5; for ships and boats see 838.6]
- 833.9 Miscellaneous

**834 Shingles. Cooperage. Packing containers. (Manufacture and use)**

- 834.1 Shingles
- 834.3 Cooperage, vats and tanks. [Cf. also 833.3]

- 834.31 Tight cooperage
- 834.32 Loose cooperage
- 834.33 Vats and tanks
- 834.39 Miscellaneous
- 834.4 Boxes, crates etc.
- 834.5 Baskets
- 834.6 Pallets
- 834.9 Miscellaneous

**835/836 Secondary, value added wood products. Remanufacturing** [excluding items under other sub-heads of 83]

**835\*** **Industrial and domestic (utility) woodware, toys and models, sports and recreational goods, musical instruments, scientific and mathematical instruments, surgical applications etc. (Manufacture and use)**

**836 Furniture and cabinet-making. Ecclesiastical woodwork. Carving. Marquetry. Wooden ornaments**

- 836.1 Furniture and cabinet-making
- 836.2 Ecclesiastical woodwork
- 836.3 Carving
- 836.4 Marquetry
- 836.5 Wooden ornaments
- 836.8 Coffins
- 836.9 Miscellaneous

**838 Vehicle manufacture**

- 838.1 Wheelwrighting. Carts, waggons etc.
- 838.2 Railway rolling stock
- 838.3 Industrial road transport vehicles
- 838.4 Motor-cars, caravan trailers etc.
- 838.5 Sledges
- 838.6 Ships and boats. [For masts see 831.48]
- 838.7 Aircraft
- 838.75 Airscrews
- 838.9 Miscellaneous

**839 Conversion, wood: industrial (mechanical): miscellaneous**

- 839.1 Wood wool and its manufacture
- 839.2 Wood flour and its manufacture
- 839.3 Chips
  - 839.31 for energy [Cf. also 839.812]
  - 839.32 for industry [Cf. also 839.84]
- 839.8 Industrial waste wood, its processing and uses
  - 839.81 Use as fuel
    - 839.811 Sawdust
    - 839.812 Other wastes [Cf. also 839.31]
    - 839.813 Briquettes and briquetting
    - 839.819 Miscellaneous
  - 839.82 Wood-burning stoves etc.
  - 839.83 Sawdust: uses other than as fuel
  - 839.84 Other waste wood: uses other than as fuel [Cf. also 839.32]
  - 839.89 Miscellaneous
- 839.9 Miscellaneous

## **84 PRESERVATION AND OTHER TREATMENTS TO IMPROVE THE PROPERTIES OF WOOD. DAMAGE BY BIOLOGICAL AGENCIES AND ITS CONTROL. SEASONING. TIMBERYARD PRACTICE (HANDLING AND STORAGE)**

### **841 Wood preservation**

- 841.1 Preservatives
  - 841.11 Creosote, tar etc.
  - 841.12 Aqueous solutions
  - 841.13 Solutions in other liquids
  - 841.14 Toxicity
  - 841.19 Miscellaneous
- 841.2 Processes. Methods of application
  - 841.21 Pressure processes
  - 841.25 Non-pressure processes
  - 841.26 After-treatment (e.g. of standing poles)
  - 841.28 Impregnation of the living tree. [Cf. also 322.4, to which cross-reference may be made if necessary]
  - 841.29 Miscellaneous
- 841.3 Preservation of particular categories of timber. [Cross-reference to appropriate subhead of 83]
- 841.4 Durability of treated timber. [For natural durability see 814.1]
  - 841.41 Under laboratory conditions
  - 841.42 In small-scale trials (graveyard tests etc.)
  - 841.43 Under service conditions
  - 841.49 Miscellaneous
- 841.9 Miscellaneous

### **842 Treatments to improve the resistance of wood to physical and chemical agencies.** [For fireproofing see 843]

- 842.2 Treatments to reduce effects of hygroscopicity
- 842.3 Treatments to improve mechanical strength
- 842.5 Treatments to improve resistance to chemicals
- 842.9 Miscellaneous

### **843 Fireproofing and fire resistance**

- 843.1 Fireproofing agents
- 843.2 Processes. Methods of application
- 843.3 Fireproofing of particular categories of timber. [Cross-reference to appropriate subhead of 83]
- 843.4 Resistance of treated timber to fire. [For natural fire resistance see 812.143]
- 843.9 Miscellaneous

### **844 Attack by plant organisms**

- 844.1 Sap-staining and mould fungi
- 844.2 Wood-destroying fungi
- 844.3 Other plants
- 844.4 Control and prevention: general. [For wood preservation proper see 841]
  - 844.41 Fungicides
  - 844.44 Heat treatment
  - 844.45 Other methods of controlling existing attacks
  - 844.47 Prevention of attack during storage and shipment
  - 844.48 Preventive measures in building construction
  - 844.49 Miscellaneous
- 844.9 Miscellaneous

### **845 Attack by animals**

- 845.1 Marine borers
- 845.2 Terrestrial borers
- 845.3 Termites
- 845.4 Other animals
- 845.5 Control and prevention: general. [For wood preservation proper see 841]
  - 845.51 Insecticides etc.
  - 845.52 Biological control

- 845.53 Fumigation
- 845.54 Heat treatment
- 845.55 Other methods of controlling existing attacks
- 845.57 Prevention of attack during storage and shipment
- 845.58 Prevention of attack in buildings etc.
- 845.59 Miscellaneous
- 845.9 Miscellaneous

#### **846 Steaming**

#### **847 Drying (seasoning)**

- 847.1 Air drying
- 847.2 Kiln drying
- 847.27 Kiln types
  - 847.271 Progressive: general
  - 847.272 Natural circulation
  - 847.273/.274 Forced draught
    - 847.273 External blower
    - 847.274 Internal fan
  - 847.275 Compartment: general
  - 847.276 Natural circulation
  - 847.277/.278 Forced draught
    - 847.277 External blower
    - 847.278 Internal fan
  - 847.279 Miscellaneous
- 847.3 Vacuum drying
- 847.4 Vapour drying
- 847.5 Electrical methods
- 847.6 Chemical methods
- 847.7 Other methods
- 847.8 Correction of seasoning defects. [For classification of defects see 852]
- 847.9 Miscellaneous

#### **848 Timberyard practice. Handling and storage of timber**

- 848.1 Handling of round timber
- 848.2 Handling of converted timber
- 848.4 Storage of round timber
  - 848.41 Land storage
  - 848.42 Water storage
  - 848.43 Sprinkling
  - 848.49 Miscellaneous
- 848.5 Storage of converted timber
- 848.6 Permanent installations
- 848.7 Mobile equipment
- 848.9 Miscellaneous

#### **849 Miscellaneous**

### **85 “GRADING” OF WOOD AND WOOD PRODUCTS** [For mensuration see 5]

#### **851 Timber quality in general; wood quality**

#### **852 Detection, recognition and assessment of injuries and defects**

- 852.1 Defects occurring before conversion [Excluding plant and animal damage, for which see 852.4/.5]
  - 852.11 Defects of stem form
  - 852.12 Knots
  - 852.13 Bark pockets, pith flecks, included phloem
  - 852.14 Pitch pockets and seams, resin streaks, gum veins, latex canals
  - 852.15 Mineral streak, strawberry mark, blemishes, defects of grain
  - 852.16 Compression failures. Abnormal heartwood. Reaction wood
  - 852.17 Wounds; foreign bodies embedded in wood



- 852.18 Shakes, splits and checks
- 852.19 Miscellaneous (e.g. lightning, hail)
- 852.2 Defects occurring during manufacture (e.g. wane, defects of dimension)
- 852.3 Seasoning defects
- 852.31 Shakes, splits, checks
- 852.32 Warping
- 852.33 Case-hardening
- 852.34 Honeycombing
- 852.35 Collapse. Washboarding
- 852.36 Severe moisture gradients
- 852.39 Miscellaneous
- 852.4 Fungus and other plant damage [See preferably 844]
- 852.5 Insect, marine-borer and other animal damage. [See preferably 845]
- 852.9 Miscellaneous

### **853\* Grading of wood in the rough**

#### **854\* "Grading" of converted timber.** [Cross-reference to article graded]

- 854.1\* Classification and nomenclature by size and shape
- 854.2 Quality grading
- 854.21 Stress grading
- 854.211 Visual stress grading
- 854.212 Mechanical stress grading
- 854.9 Miscellaneous

### **859 Miscellaneous**

## **86 PULP INDUSTRIES. COMPOSITE MATERIALS MADE WHOLLY OR PARTLY OF WOODY MATTER. CHEMICAL UTILIZATION OF WOOD**

### **861 Pulp and paper manufacture. Textile and other cellulose derivatives** (UDC 676 deals with this subject in more detail)

- 861.0 Raw materials etc. Pulpwood and chips. [Include here also the raw material for chipboards, fibreboards etc. (which are classified under 862). Cross-reference this number as appropriate, e.g. Suitability of different wood species-861.0 : 174/176 (q.v.), subdivided alphabetically by scientific names, e.g. 861.0 : 176.1 *Fagus sylvatica*; Harvesting-861.0 : 32 ...; Supplies etc.-861.0 : 72 ...; Influence of particular wood properties-861.0 : 81 ...; Seasoning and storage-861.0 : 847/848; Wood waste as raw material-861.0 : 839.83/.84]
- 861.1 Pulping and pulp. [Processes for the utilization of wood waste are entered under this head with cross-reference to 839.83/.84]
- 861.10 Mill lay-out, power, machinery etc.
- 861.11 Mechanical (groundwood) pulping and pulp
- 861.12/.16 Chemical and semichemical pulping and pulp: general
- 861.12 Semichemical pulping and pulp
- 861.13 Soda pulping and pulp
- 861.14 Sulphate pulping and pulp
- 861.15 Sulphite pulping and pulp
- 861.16 Other pulping processes and pulp including bioconversion
- 861.17 Bleaching and other after-treatment of pulp
- 861.18\* Trade classification of pulps
- 861.19 Miscellaneous (e.g. utilization of waste liquors). [For lignin see 864]
- 861.2 Papermaking: paper and cardboard
- 861.20 Mill lay-out, power, machinery etc.
- 861.28 Types of paper, cardboard etc.
- 861.29 Miscellaneous
- 861.4 Manufacture of cellulose textiles (rayon, cellulose wool etc.)
- 861.5 Cellulose derivatives (cellulose esters etc.)
- 861.6 Fodder cellulose
- 861.9 Miscellaneous

- 862 Composite materials made wholly or partly of woody matter.** [For raw materials etc. see under 861.0; for sandwich materials see 832.284]
- 862.1 Wood-wool building slabs (e.g. Heraklith)
  - 862.2 Chipboards. Boards formed of mixed chips (including sawdust) and fibres. Resin-bonded chip mouldings. Waferboard. Flakeboard. Oriented strand board
  - 862.3 Fibreboards (including fibreboards laminated with other materials, e.g. veneer, chipboard, paper). Resin-bonded fibre mouldings
  - 862.4 Sawdust/magnesite flooring, wood/cement concrete etc. [For prefabricated boards with mineral binders see 862.2 and 862.3]
  - 862.9 Miscellaneous
- 863 Wood hydrolysis. Saccharification**
- 863.1 Processes
  - 863.4 Wood sugar and alcohol
  - 863.5 Yeast and protein production
  - 863.6 Wood sugar for cattle fodder
  - 863.9 Miscellaneous
- 864 Utilization of lignin.** [For use in plastics see 865]
- 864.1 As fuel
  - 864.2 As a soil amendment
  - 864.3 In water softeners etc.
  - 864.4 In adhesives
  - 864.5 In road-making compounds
  - 864.6 For production of vanillin
  - 864.9 Miscellaneous
- 865 Plastics**
- 865.1 Use of waste wood etc.
  - 865.2 Use of lignin
  - 865.9 Miscellaneous
- 866 Utilization of wood extractives**
- 866.1 Resins and essential oils
  - 866.2 Fats, fixed oils, waxes
  - 866.3 Colouring matter, dyes
  - 866.4 Tanstuffs
  - 866.5 Gums etc.
  - 866.9 Miscellaneous
- 867 Destructive distillation**
- 867.1 With no recovery of by-products
  - 867.2 With recovery of by-products
  - 867.3 Production of gas from wood or charcoal
    - 867.31 For propelling vehicles
    - 867.32 For industrial use
    - 867.39 Miscellaneous
  - 867.5 Charcoal, its properties and uses
  - 867.6 Methyl alcohol, ketones, phenols etc.
  - 867.7 Acetates etc.
  - 867.8 Tar, oils etc.
  - 867.9 Miscellaneous

## **88 ECONOMY IN THE USE OF WOOD. REPLACEMENT OF WOOD BY COMPETITIVE MATERIALS**

### **89 OTHER (“MINOR”) FOREST PRODUCTS.** [Cross-reference as necessary to 28]

#### **891 Mineral products (including peat and coal)**

#### **892 Vegetable products**

- 892.1 Grass. Litter. Leaf fodder. Food from forest
- 892.2 Agricultural products
- 892.3 Wood ashes
- 892.4 Bark products. Tanstuffs. Cork. [For medicinal bark products see 892.52]
  - 892.41 Tanstuffs
  - 892.42 Cork
  - 892.43 Bark-fibre products
  - 892.49 Miscellaneous
- 892.5 Christmas trees. Ornamental trees and branches. Medicinal plants. Edible plants
  - 892.51 Christmas trees. Ornamental trees and branches
  - 892.52 Medicinal plants
  - 892.53 Edible plants
  - 892.54 Insecticides from plants
  - 892.59 Miscellaneous
- 892.6 Resin and turpentine. Essential oils. Fixed oils and fats. Waxes. Gums. Latex. Dyestuffs. Sap sugar. [See also 866 for wood extractives]
  - 892.61 Resin and turpentine
  - 892.62 Essential oils
  - 892.63 Fixed oils and fats
  - 892.64 Waxes
  - 892.65 Gums and kinos
  - 892.66 Latex
  - 892.67 Dyestuffs
  - 892.68 Sugar
  - 892.69 Miscellaneous
- 892.7 Fruits. Seeds. Fibres, yarns and flosses
  - 892.71 Fruits
  - 892.72 Seeds
  - 892.73 Fibres, yarns and flosses [For bark fibres see 892.43]
  - 892.79 Miscellaneous
- 892.8 Heather. Broom. Osiers. Canes and bamboos
  - 892.81 Heather, broom etc.
  - 892.82 Osiers
  - 892.83 Canes and bamboos
  - 892.84 Reeds and rushes. Thatching materials
  - 892.89 Miscellaneous
- 892.9 Miscellaneous

#### **893 Animal products (e.g. lac; honey)**

#### **894 Other products**

- 894.1 Fungi
- 894.2 Mushrooms
- 894.3 Lichens

#### **899 Miscellaneous**



## **9 FORESTS AND FORESTRY FROM THE NATIONAL POINT OF VIEW. SOCIAL ECONOMICS OF FORESTRY.**

### **Primary subheads**

- 90 General**
  - 91 Land use, land-use policy. Afforestation policy**
  - 92 Forest ownership and ownership policy**
  - 93 Public supervision and regulation of forestry, including legislation for these purposes**
  - 94 Other methods to implement forest policy**
  - 95 Forest taxation**
  - 96 Forest labour questions; labour questions in wood transport and the wood industries**
  - 97 International forest policy and other international collaboration**
  - 99 Miscellaneous**
- 

### **90 GENERAL**

- 901 Theory, methods, systematics; peculiarities of forestry from the point of view of social economics**
- 902 History of forests and forestry.** [Subdivide by cross-reference to geographical numbers and to subject numbers. For ecological aspects see 182.1. For General history see UDC 94. For histories of organizations use 902--090.2 or 972.1/.9 for particular organization]
  - 902.1 Biography. Obituary notices. Memorials
  - 902.2 History of organizations
- 903 Forest policy, general: general systems, programmes, plans etc.**
  - 903.1 Public participation
- 904 General regional accounts of forests and forestry**
- 905 Forest statistics and resources**
  - 905.1 General forest statistics
  - 905.2 Forest resources, balance of growth and depletion ("drain"), "cut" of individual regions
  - 905.9 Miscellaneous
- 906 Direct economic significance of forests (position of forests and forestry in the national economy)**
- 907 Indirect significance of forests, conservation and environment protection**
  - 907.1 Rural amenity and landscape conservation
    - 907.11 National parks etc.
    - 907.12 Plant and tree sanctuaries; protected trees
    - 907.13 Game and bird sanctuaries
    - 907.14 Water sanctuaries
    - 907.15 Nature trails
    - 907.19 Miscellaneous
  - 907.2 Recreation
  - 907.3 Influences on the environment
    - 907.32 Protection forest
    - 907.33 Environmental protection
  - 907.4 Hygienic value
  - 907.6 Influences on religion, art etc.
  - 907.8 Military value
  - 907.9 Miscellaneous
- 908 Relationship to other branches of husbandry and industry.** [For hunting, shooting and fishing see 156/157]
  - 908.1 To agriculture and pastoral husbandry
  - 908.2 To industry and transport
  - 908.9 Miscellaneous
- 909 Miscellaneous**

## **91 LAND USE, LAND-USE POLICY, AFFORESTATION POLICY**

- 911 General. Land-use planning. Regional planning**
- 912 Colonization and settlement schemes**
- 913 Relations between forest, agricultural and pastoral land. Clearing of the forest; afforestation of agricultural and pastoral land; shifting cultivation (policy); land use** [See also UDC 332.3 Land use and its sub-categories for cross referencing and also UDC 711.4 land use; UDC 712.2 Planning of the landscape pattern in general]
- 914 Relations between forest and waste land. Utilization and afforestation of waste land. Deforestation**
- 915 Timber-growing outside the forest (e.g. roadside strips).** [For technique see under 26]
- 916 Multiple land use**
- 917 Relation between forest and utilities e.g. transmission lines, roads etc.** [Cf. also 387]
- 919 Miscellaneous**

## **92 FOREST OWNERSHIP AND OWNERSHIP POLICY**

- 920 General. History. Principles**
- 921 Private versus state ownership; socialization, nationalization; land reform**
- 922 Publicly-owned forests**
  - 922.1 State (federal, national) forests
  - 922.2 Communal (“community”) forests; municipal forests
  - 922.3 Forests belonging to churches, monasteries etc. (including private forests in this category)
  - 922.4 Other corporate forests
- 923 Privately-owned forests** (other than those under 922.3 and 924)
  - 923.2 Forests belonging to industries, mining and communications companies etc.
  - 923.3 Large private forests
  - 923.4 Farm forests, small forests, woodlots
  - 923.9 Miscellaneous
- 924 Forests in common ownership**
- 928 Fragmentation and consolidation of holdings**
- 929 Miscellaneous**

## **93 PUBLIC SUPERVISION AND REGULATION OF FORESTRY, INCLUDING LEGISLATION FOR THESE PURPOSES**

- 931 General. General forest laws. Nature and environmental protection laws**
  - 931.1 Forest laws
  - 931.2 Nature and environmental protection laws
- 932 Public administrative organization** [not inside management and business administration, for which see 68]
- 933 Protection of ownership. Property issues**
  - 933.8 Criminal and civil wrongs, and relevant regulations
  - 933.9 Miscellaneous
- 934 Provision for and safeguarding of protection forest**
- 935 Other public supervision and control**
  - 935.1 As protection against poor management. Assurance of regeneration and sustained yield
  - 935.2 Concerning forest improvements
  - 935.4 Concerning forest protection
  - 935.5 Concerning forest rights (servitudes), etc.
  - 935.6 Concerning leases and licences [Cf. 644.6 and 75]
  - 935.9 Miscellaneous
- 939 Miscellaneous**

## **94 OTHER METHODS TO IMPLEMENT FOREST POLICY**

**941 State subsidies. Provision of land, seed, planting stock etc. free or at low cost**

### **942 Credits**

- 942.1 For forestry
- 942.11 State
- 942.12 Other
- 942.7 Forest as security
- 942.9 Miscellaneous

### **943 Forest insurance**

### **944 Co-operation. Collaboration of forest owners.**

### **945 Advisory services; publicity, propaganda; education, training; research**

- 945.1 Advisory and information services, documentation centres
- 945.11 State advisory services
- 945.12 State and private collaboration in advisory services
- 945.13 Private advisory services, consultants
- 945.14 Information services, documentation centres
- 945.15 Libraries
- 945.16 Archives
- 945.17 Museums
- 945.19 Miscellaneous
- 945.2 Publicity, propaganda
- 945.21 Literary propaganda
- 945.22 Films, videos, multimedia
- 945.23 Broadcasts on radio, television
- 945.24 Exhibitions, shows and fairs
- 945.25 Demonstration forests, model forests
- 945.26 Competitions, awards
- 945.27 Tree-planting days etc.
- 945.28 Internet, web sites, portals, web services
- 945.29 Miscellaneous
- 945.3 Education. Training
- 945.31 Higher education
- 945.32 Elementary education
- 945.33 Practical training. [For training in work science and efficiency see 303]
- 945.34 Continuation courses
- 945.35 Educational tours
- 945.36 Careers in forestry
- 945.39 Miscellaneous
- 945.4 Research
- 945.5 Computers in Forestry: Models, Programs, information systems
- 945.9 Miscellaneous

### **946 Associations, societies; conferences, excursions; institutions. [For international associations etc. see 97]**

- 946.1 Associations, societies
- 946.2 Conferences and excursions
- 946.3 Institutions, institutes
- 946.9 Miscellaneous

### **949 Miscellaneous**

## **95 FOREST TAXATION**

## **96 FOREST LABOUR QUESTIONS; LABOUR QUESTIONS IN WOOD TRANSPORT AND THE WOOD INDUSTRIES**

### **961 Manpower situation. Supply and demand. Employment and unemployment. (Including statistics)**

961.1 Employment agencies and services. Career services.

961.2 Statistics

### **962 Wages (tariff agreements etc.)**

### **963 Working time. Seasonal variations. Employment the year round**

**964 Insurance of workers.** [For accidents and accident prevention see 304]

### **965 Housing and workers' holdings**

### **966 Other measures for the welfare of workers**

### **967 Employers' associations. Workers' associations. Unions and clubs etc.**

### **968 Labour disputes**

### **969 Miscellaneous**

## **97 INTERNATIONAL FOREST POLICY AND OTHER INTERNATIONAL COLLABORATION** [For international trade relationships and industrial collaboration see 742]

### **971 Congresses, conferences; excursions**

### **972 Organizations**

972.1 State organizations

972.11 FAO

972.12 Other (alphabetically arranged)

972.2 Scientific, non-state organizations (alphabetically arranged)

972.3 Forest owners' organizations (alphabetically arranged)

972.4 Forest workers' organizations (alphabetically arranged)

972.9 Other organizations (alphabetically arranged)

### **973 Agreements**

973.1 State

973.2 Other

### **979 Miscellaneous**

## **99 MISCELLANEOUS**



**Appendix A**  
**Subject auxiliaries**  
**--01/--09**





## **--01 RESEARCH AND TESTING. EXPERIMENTS**

### **--010 Technique and procedure in research and testing: general**

#### **--011 Terminology. Nomenclature**

- 011.1 Scientific
- 011.2 Popular, vernacular
- 011.3 Trade

#### **--012 Culture and care of experimental organisms**

- 012.1 Vertebrates
- 012.3 Arthropods etc.
- 012.4 Lower organisms (both plant and animal)
- 012.5 Vascular plants

#### **--013 Specimens (samples)**

- 013.1 Selection, collection
- 013.2 Preparation. [See also --016]
- 013.4 Preservation in collections, museums etc.
- 013.5 Use of small samples
- 013.6 Use of medium-scale samples
- 013.7 Use of service-scale samples
- 013.8 Built-up assemblies as samples

#### **--014 Classification. Identification [Cf. also --016.] Detection. Qualitative tests** N.B.--Any of the subdivisions .1/.9 of --015 may be applied, wherever appropriate, as subdivisions of --014; i.e. these two heads are subdivisible in parallel.

#### **--015 Measurements. Quantitive tests. Calculations. Statistical methods.**

- 015.1 Structural
- 015.2 Physical and mechanical. Physico- chemical
  - 015.21 Optical (including other radiations of ultra-short wavelength)
  - 015.22 Vibrational. Acoustic
  - 015.23 Frictional (including viscosity)
  - 015.24 Thermal
  - 015.25 Electrical and magnetic
  - 015.26 Density, weight; elastic and strength properties
  - 015.28 Physico-chemical (absorption etc.)
- 015.3 Chemical
- 015.4 Durability and biological
- 015.5 Mathematical and mensurational. Statistical methods
- 015.6 Effect of test factors imposed on properties under test. Normalization of test conditions
- 015.7 Apparatus, instruments, tools, machines and equipment
- 015.9 Miscellaneous

#### **--016 Microscopy (including the use of differential stains etc. for macroscopic identification)**

- 016.1 Embedding, sectioning etc.
- 016.2 Staining etc.
- 016.3 Dehydration and other treatments. Mounting
- 016.4 Special techniques for examination
- 016.7 Apparatus, instruments etc.
- 016.9 Microscopy: Miscellaneous

#### **--017 Apparatus, instruments etc.** [See preferably .7 of other subheads of section --01] N.B.--Cf. also --087. The present head and --087 are subdivide in parallel as follows:--

- 017.0 Apparatus, instruments etc.: General
- 017.1 Fine instruments and apparatus
- 017.2 Hand tools
- 017.3 Mechanically-driven hand tools
- 017.4 Mobile machinery, "portable" machinery
- 017.5 Stationary machinery and apparatus
- 017.6 Accessories
- 017.7 Regulating instruments for the above
- 017.8 Maintenance
- 017.9 Apparatus, instruments etc.: Miscellaneous

- 018 Results. Properties and behaviour
- 019 Research and testing. Experiments. Miscellaneous

## --02 HUSBANDRY. CULTIVATION

- 021 Soil husbandry
- 022 Plant husbandry
- 023 Animal husbandry

## --03 HARVESTING, COLLECTION OF NATURAL PRODUCE

- 035 Work technique and efficiency

## --04 PROTECTION

- 042 Against meteorological and chemical agencies
- 043 Against fire
- 044 Against plant organisms
- 045 Against animal organisms
- 046 Against damage by man
- 049 Protection: Miscellaneous

## --05 SURVEYS

## --06 ORGANIZATION AND PLANNING. INTERNAL ECONOMICS AND FINANCE. ADMINISTRATION

- 061 Principles or organization
- 062 Elaboration of plans
- 064 Finance. Costs and returns
- 065 Telecommunications
  - 065.1 Telephonic and telegraphic
  - 065.2 Radio
  - 065.3 Visual
  - 065.9 Organization and planning. Internal economics and finance. Administration: Miscellaneous
- 066 Buildings, roads etc.
- 067 Transport of men, supplies and equipment
  - 067.1 Land transport
  - 067.2 Water transport
  - 067.3 Air transport
- 068 Administration. Staff
- 069 Organization and planning. Internal economics and finance. Administration: Miscellaneous

## --07 TRADE AND TRANSPORT ECONOMICS

## --08 EVERYDAY OPERATIONS. PRODUCTION PROCESSES, PRODUCTS ETC.

- 081 Materials, fuel and power
  - 081.1 Normal (raw, initial) material, in usual grades and sizes
  - 081.2 Materials, fuel and power: Material differing from normal only in size and/or grade
  - 081.3 Everyday operations. Production processes. Products etc.: Materials, fuel and power: Substitute materials of the same natural type (e.g. "secondary" timbers)
  - 081.4 Substitute materials of a different natural type
  - 081.6 Auxiliary materials
  - 081.7 Fuel and power

- 081.9        Everyday operations. Production processes. Products etc.: Materials, fuel and power: Miscellaneous
- 082    Everyday operations. Production processes. Products etc.: Preparatory operations**
- 083    Main phase of operation**
- 084    Accessory and final operations**
- 084.1        Accessory and final operations: In actual production
- 084.3        Accessory and final operations: Packing
- 084.4        Accessory and final operations: Storage
- 086    Regulation of conditions during operations**
- 086.7        Apparatus, instruments, machinery for regulation
- 087    Apparatus, instruments, machinery.** [See also --086.7] N.B.--This head is subdivided, in parallel with -- 017, as follows:--
- 087.0        Apparatus, instruments, machinery: General
- 087.1        Fine instruments and apparatus
- 087.2        Hand tools
- 087.3        Mechanically-driven hand tools
- 087.4        Mobile machinery, "portable" machinery
- 087.5        Stationary machinery and apparatus
- 087.6        Accessories
- 087.7        Regulating instruments for the above
- 087.8        Maintenance
- 087.9        Apparatus, instruments, machinery: General: Miscellaneous
- 088    Products and their uses**
- 088.1        Crude, semi-manufactured or intermediate products
- 088.2        Fully manufactured, finished products
- 088.3        Prefabricated products
- 088.4        Competitive products
- 088.5        Yield of product per unit of raw material
- 088.6        Wastes and their utilization. By-products
- 088.9        Products and their uses: Miscellaneous

## **--09 NATIONAL, SOCIAL AND INTERNATIONAL ASPECTS**

- 090    General**
- 090.2        History
- 090.3        Policy
- 090.4        General regional accounts
- 090.5        Resources
- 092    Ownership**
- 092.1        Public versus private
- 092.2        Ownership: Public
- 092.3        Ownership: Private
- 092.4        Ownership: Common
- 093    Public supervision and control. Legislation**
- 094    Promotion of private enterprise**
- 094.1        Promotion of private enterprise: State subsidies
- 094.2        Promotion of private enterprise: Loans, credit
- 094.3        Promotion of private enterprise: Insurance
- 094.4        Promotion of private enterprise: Co-operation
- 094.5        Promotion of private enterprise: Publicity, propaganda
- 094.6        Promotion of private enterprise: Societies, associations, excursions; institutions
- 094.8        Promotion of private enterprise: Education, training
- 095    Taxation**
- 096    Labour policy**
- 097    International activities**
- 099    National, social and international aspects: Miscellaneous**



## **Appendix B**

### **Auxiliaries of form and place**

(reproduced with kind permission of the UDC Consortium)







## **(0) AUXILIARY NUMBERS OF FORM**

### **(01) Bibliographies**

### **(02) Systematically arranged data in book form**

- (021) Comprehensive works. Handbooks. Academic textbooks
- (023) Books of limited scope. Elementary works. Popular manuals

### **(03) Alphabetically classified data in book form**

- (031) Encyclopaedias and [descriptive] dictionaries of large scope
- (033) Encyclopaedias and [descriptive] dictionaries of limited scope
- (035) Handbooks. Manuals.
- (036) Guidebooks (with practical and descriptive information)
- (038) Language dictionaries. Technical dictionaries

### **(04) Non-serial separates. Separata**

- (041) Brochures. Pamphlets. Reprints
- (042.3) Lectures
- (042.4) Lecture courses
- (042.5) Speeches. Orations
- (042) Lectures, addresses etc.
- (043) Theses, dissertations
  - (043.2) Theses. Academic theses
  - (043.3) Dissertations
  - (043.5) Inaugural dissertations (academic)
- (044) Letters. Correspondence. Circulars
- (045) Articles in periodicals
- (046) Newspaper articles
- (047) Reports. Notices
  - (047.1) Progress reports
  - (047.2) Travel reports. Reports of trips (business, study trips etc.)
  - (047.3) Special reports
  - (047.5) Reports for the press. Press notices
  - (047.53) Interviews
  - (047.6) Press cuttings. Short notices
- (048) Bibliographic descriptions. Abstracts. Summaries. Surveys
  - (048.1) Bibliographical lists [lists of references]. Reviews
  - (048.3) Abstracts
  - (048.4) Summaries
  - (048.6) Abridged editions
  - (048.8) Reviews: Collected abstracts
- (049) Other non-serial separates
  - (049.2) Polemics. Disputations. Controversies. Diatribes. Justifications. Vindications. Rejoinders. Apologias
  - (049.3) Declarations of opinion. Advice. Hints. Critiques. Appreciations
  - (049.5) Questionnaires. Inquiries. Opinion polls. Referenda

### **(05) Periodicals. Documents published periodically**

- (051) Periodicals (in the strict sense)
  - (051.6) Abstracting journals
- (052/054) Periodicals appearing more than once annually
  - (054) Newspapers
  - (055) News bulletins. Newsletters. Information bulletins
  - (058) Annuals. Yearbooks
  - (058.7) Directories. Periodicals. Documents published periodically: Address books and lists of addresses
- (059) Almanacs. Calendars. Diaries

### **(06) Documents relating to societies, associations, organizations**

- (061) Governmental organization publications
- (062) Non-governmental body publications
- (063) Publications from conferences, congresses, symposia, etc.

- (066) Publications of scientific/technical centres, research institutes, etc.
- (069) Publications of common-interest groups, schools of thought, etc.

**(07) Documents for instruction, teaching, study, training**

- (072) Documentary materials for teaching. Teaching aids
- (073) Curricula. Syllabuses
- (075) School books. Educational programmes
- (076) Documents for practical instruction, training
- (078) Educational documents and material not listed elsewhere
- (079) Documents connected with competitions, tests, examinations etc.
- (079.2) Paper qualifications. Diplomas. Degrees. Certificates of proficiency etc.
- (079.3) Reports of expeditions and travels
- (079.5) Questionnaires

**(08) Collected and polygraphic works. Forms. Lists. Illustrations. Business publications**

- (081) Collected works of individual authors
  - (081.1) Collected works
  - (081.2) Selected works
- (082) Collected or collective works of different authors
  - (082.1) Series (works by various authors published under a general title). Publishers' series, sets, libraries
  - (082.2) Anthologies. Selections. Excerpts. Quotations
- (083) Technical and normative documents. Tables. Lists etc
  - (083.1) Recipes. Prescriptions. Directions
  - (083.13) Directions for use. Advice. Instructions
  - (083.2) Printed forms. Registers
  - (083.3) Tables of mathematical formulae
  - (083.4) Statistical documents. Tables of statistics
  - (083.5) Numerical tables. Conversion tables. Ready reckoners
  - (083.53) Numeric tables. Percentage tables. Ready reckoners
  - (083.57) Nomograms
  - (083.58) Network diagrams. Critical path diagrams (arrow diagrams)
  - (083.6) Tabulated data other than numerical tables
  - (083.7) Standards. Specifications
  - (083.8) Lists. Inventories. Catalogues [for trade catalogues see (085)]
  - (083.9) Plans, projects
- (084) Images. Pictorial documents. Graphic documents
  - (084.1) Pictures. Illustrations
    - (084.11) Drawings
    - (084.12) Photographic images
      - (084.121) Photographs
      - (084.122) Cinema films
    - (084.16) Enlargements. Microphotographs
  - (084.2) Schematic representations. Diagrams. Graphs
    - (084.21) Diagrams. Graphs
  - (084.3) Maps. Plans
  - (084.4) Atlases
    - (084.41) General geographic atlases (nonthematic)
    - (084.42) Thematic atlases
  - (084.5) Pictorial posters etc.
- (085) Publications of industrial and commercial undertakings. Catalogues. Prospectuses. Circulars. Advertisements etc.
  - (085.2) Trade catalogues. Industrial catalogues
  - (085.3) House journals. Company magazines
  - (085.5) Prospectuses
- (086) Three-dimensional (solid) documents. Audio and audiovisual documents
- (088) Attestations. Special-purpose documents
  - (088.4) Contracts. Written agreements
  - (088.7) Factory and trade marks
  - (088.8) Patents

## **(09) Presentation in historical form. Legal and historical sources**

- (091) Historical presentation in the strict sense
- (092) Biographical presentation
- (093) Historical sources
  - (093.2) Official sources. Public records, documents, acts
  - (093.3) Literary sources. Chronicles. Diaries
- (094) Legal sources. Legal documents
  - (094.2) International agreements and treaties. International laws. Enactments between independent states
  - (094.4) Law books and legal problems (textbooks)
  - (094.5) Individual laws. Simple laws and detailed regulations resulting from them. Bills (draft laws). Acts
  - (094.7) Legal sources emanating from administrative authorities of various grades

## **(1.../9...) COMMON AUXILIARIES OF PLACE**

### **Reproduced with kind permission of the UDC Consortium**

The place auxiliaries indicate the geographical range, locality or other spatial aspect of a subject denoted by a main UDC number, e.g. 331.2(44) Wages in France 338.47(81) Economics of transport in Brazil They are the primary characteristic of division in 913 'Regional geography' and 94 'History'

### **(1) Place and space in general. Localization. Orientation**

- (100) Universal as to place. International. All countries in general. Up to three countries may be denoted by the auxiliaries for the individual countries. Where more than three countries are concerned, one (or each, by multiple entry) may be specified, in relation to (100). The totality of all or many countries is denoted by (100) alone

### **(2) Physiographic designation**

#### **(21) Surface of the Earth in general. Land areas in particular. Natural zones and regions**

- (210) Land formations
- (211) Cold regions. Polar regions. Frigid regions
- (212) Intermediate and subpolar regions. Temperate zones. Mid-latitude climatic regions
  - (212-13) South temperate zone
  - (212-17) North temperate zone
- (213) Subtropical and tropical regions generally
  - (213.1) Subtropical regions generally
  - (213.5) Tropical regions. Torrid zone. Tropics

#### **(23) Above sea level. Surface relief. Above ground generally. Mountains**

- (23.07) Limits of altitude. Height zones
  - (23.071) Tree zones. Limits of trees
  - (23.073) Treeless vegetation zones. Limits of vegetation
  - (23.075) Snow zones. Limits of snow
- (234) Mountains of Europe
  - (234.1) Mountains of the Iberian peninsula
  - (234.2) Mountains of France and Belgium
  - (234.3) Alps
    - (234.31) Western Alps
    - (234.32) Eastern Alps
    - (234.351) Jura Mountains
    - (234.371) Mountains of Austria
  - (234.41) Mountains of the Italian peninsula
  - (234.42) Mountains of the Balkan Peninsula
  - (234.5) Mountains of Central Europe
  - (234.6) Mountains of Great Britain
  - (234.7) Mountains of Scandinavia
  - (234.8) Mountains of Russia in Europe

- (234.9)       Caucasus. Kavkaz range
- (235)       Mountains of Asia
- (235.1)      Mountains of western Asia
- (235.2)      Mountains of Central Asia (Asiatic Plateau)
- (235.3)      Mountains of northern Asia
- (235.4)      Mountains of eastern Asia
- (235.5)      Mountains of southern Asia
- (236)       Mountains of Africa
- (236.2)      Mountains of the Sahara region
- (236.3)      Mountains of the Sudan region, Guinea and the Cameroons
- (236.5)      Mountains of north-eastern Africa
- (236.51)     Ethiopian Highlands
- (236.6)      Mountains of the Congo region
- (236.7)      Mountains of eastern Africa
- (236.8)      Mountains of southern Africa
- (237)       Mountains of North America
- (237.1)      Western Cordillera
- (237.2)      Appalachian Mountains
- (238)       Mountains of South America
- (238.1)      South America, western area. South American Cordillera. Andes
- (238.2)      South America, northern area
- (238.3)      South America, eastern area
- (238.31)     Brazilian Highlands
- (239)       Mountains of Oceania, the Arctic, the Antarctic
- (239.1)      Mountains of the Malay Archipelago
- (239.2)      Mountains of the Sunda Islands
- (239.3)      Mountains of New Zealand and Melanesia
- (239.4)      Mountains of Australia
- (239.5)      Mountains of New Guinea
- (239.6)      Mountains of Polynesia
- (239.8)      Mountains of the Arctic
- (239.9)      Mountains of the Antarctic

**(25)   Natural flat ground (at, above or below sea level). The ground in its natural condition, cultivated or inhabited**

- (251)       Steppes. Pampas. Plains. Prairies. Savannas. Heathland
- (252)       Unproductive land
- (253)       Virgin (primeval) woods and forests. Jungle
- (254)       Arable land, cleared or cultivated
- (255)       Flooded land. Irrigated land. Drained land

**(26)   Oceans, seas and interconnections**

- (261)       Atlantic Ocean
- (262)       Mediterranean Sea
- (262.3)     Adriatic Sea
- (265)       Pacific Ocean
- (267)       Indian Ocean
- (268)       Arctic Ocean
- (269)       Southern Ocean (Antarctic Ocean)

**(28)   Inland waters**

- (282)       Flowing waters. Watercourses. Waterways. Rivers
- (285)       Still and stagnant waters. Lakes. Ponds. Swamps
- (289)       Brackish waters

## **(4/9) PLACES IN THE MODERN WORLD**

### **(4) Europe**

#### **(4-191.2) Central Europe**

##### **(41) British Isles (Great Britain, Ireland and minor islands) Class here collective works on the British Isles and the Channel Islands**

(410) United Kingdom of Great Britain and Northern Ireland Class here also Great Britain (England, Scotland and Wales)

(410.1) England

(410.3) Wales

(410.5) Scotland

(410.7) Northern Ireland

(415) Ireland (geographical whole)

(417) Ireland. Republic of Ireland. Eire

(430) Germany. Federal Republic of Germany (Bundesrepublik Deutschland) Class here information about the Federal Republic of Germany from 1990, and about Germany as a whole at any period

(430.1) Western and southern Länder. Class here also information about Western Germany from 1945 and the Federal Republic of Germany, 1949-1990

(430.2) Eastern Länder. Class here also Eastern Germany from 1945 and the German Democratic Republic (Deutsche Demokratische Republik) 1949-1990 Option: see (430.3)

(435.9) Luxembourg. Grand Duchy of Luxembourg

(436) Austria. Republic of Austria. Republik Österreich. Primary administrative divisions: Bundesländer

(437) Czechoslovakia (1918-1992)

(437.3) Czech Republic. Czechia (Cesk Republika. Česká) For Slezsko (Silesia), previously at this number, see (437.33)

(437.6) Slovakia (1992-). Slovak Republic. Slovensko. Slovenská Republika

(438) Poland. Polish Republic Primary administrative divisions: Wojewodztwa

(439) Hungary. Hungarian Republic Primary administrative divisions: Megyek. Divide alphabetically where not otherwise provided for

(44) France. French Republic. République Française Primary administrative divisions: départements grouped into conventional regions

(449.45) Corse (Corsica). Région

(449.49) Monaco. Principality of Monaco

(450) Italy. Republic of Italy. Repubblica Italiana Primary administrative divisions: provincie

(450.82) Regione della Sicilia (Sicily)

(450.88) Regione della Sardegna (Sardinia)

(454.4) San Marino. Republic of San Marino

(458.2) Malta. Republic of Malta

##### **(46) Iberian peninsula**

(460) Spain. Kingdom of Spain. Reino de España Administrative subdivision in comunidades autónomas and provincias, authorized by the Constitution of 1978

(460.32) Islas Baleares

(460.41) Canary Islands. Canarias

(467.2) Andorra. The Principality of Andorra. Principat d'Andorra

(468.2) Gibraltar (UK)

(469) Portugal. Portuguese Republic

(469.8) Arquipélago da Madeira

(469.9) Arquipélago dos Açores (Azores)

##### **(47) Former European USSR**

(474) Baltic States

(474.2) Estonia. Republic of Estonia

(474.3) Latvia. Republic of Latvia

(474.5) Lithuania. Republic of Lithuania

(476) Belarus. Republic of Belarus

- (477) Ukraina. Ukraine
- (478) Moldova
- (479) Caucasus as a whole Including (470.62/.67) Northern Caucasus
- (479.22) Georgia. Republic of Georgia. Sakartvelo
- (479.24) Azerbaijan Formerly Azerbaijan S.S.R.
- (479.25) Armenia. Republic of Armenia. Hayastan

**(48) Scandinavian States**

- (480) Finland. Republic of Finland. Suomi Finnish/Swedish form of name
- (481) Norway. Kingdom of Norway Primary administrative divisions: Fylker (five-figure subdivisions)
- (485) Sweden. Kingdom of Sweden
- (489) Denmark. Kingdom of Denmark
- (491.1) Iceland. Republic of Iceland
- (492) Netherlands. Kingdom of the Netherlands. Koninkrijk der Nederlanden Primary administrative divisions: Provinces
- (493) Belgium. Kingdom of Belgium Provinces (four-figure subdivisions) and arrondissements (five-figure subdivisions). Dual names: Dutch/French or French/Dutch, according to predominant language of province
- (494) Switzerland. Swiss Confederation Primary administrative divisions: (Halb)Kanton
- (494.9) Liechtenstein. Principality of Liechtenstein
- (495) Greece. Hellenic Republic
- (495.9) Kriti (Crete)
- (496.5) Albania. People's Socialist Republic of Albania
- (497) Balkan states in general
- (497.1) Yugoslavia (Jugoslavija). Federal Republic of Yugoslavia -1991
- (497.11+497.16) Serbia and Montenegro (Srbija i Crna Gora) Known as Yugoslavia (Jugoslavija) 1991-2003
- (497.11) Srbija (Serbia)
- (497.12) Slovenia. Slovenija To 1991
- (497.15) Bosnia and Herzegovina. Bosna i Hercegovina To 1991
- (497.16) Crna Gora (Montenegro)
- (497.17) Macedonia. Makedonija To 1991
- (497.2) Bulgaria. Republic of Bulgaria
- (497.4) Slovenia. Republic of Slovenia. Slovenija (1991-).
- (497.5) Croatia. Republic of Croatia. Hrvatska 1991-
- (498) Romania. Republic of Romania

**(5) Asia Class here also Orient in general**

- (5-11) Eastern Asia. Far East (510) China. (512.317) Hong Kong. (512.318) Macau. (517.3) Mongolia. (519.3) North Korea. (519.5) South Korea. (520) Japan. (529) Taiwan
- (5-12) South-east Asia (591) Myanmar. (592.3) Singapore. (592.6) Brunei. (593) Thailand. (594) Indonesia. (595) Malaysia. (596) Cambodia. (597) Vietnam. (598) Laos. (599) Philippines
- (5-13) South Asia (540) India. (541.31) Bhutan. (541.35) Nepal. (548.82) Maldives. (548.7) Sri Lanka. (549.1) Pakistan. (549.3) Bangladesh
- (5-15) Western Asia. Near and/or Middle East (532) Saudi Arabia. (536.2) United Arab Emirates. (533) Yemen. (535) Oman. (536.4) Qatar. (536.5) Bahrain. (536.8) Kuwait. (55) Iran. (564.3) Cyprus. (567) Iraq. (569.1) Syria. (569.3) Lebanon. (569.4) Israel. (569.5) Jordan
- (5-191.2) Central Asia (574) Kazakhstan. (575.1) Uzbekistan. (575.2) Kirghizia. (575.3) Tajikistan. (575.4) Turkmenistan. (581) Afghanistan
- (510) China. People's Republic of China Names of places are given primarily in Pinyin romanization (if available), followed in parentheses by other spellings with some currency
- (512.317) Hong Kong, Special Administrative Region
- (515) Xizang Zizhiqu. Tibet Autonomous Region
- (516) Xinjiang Uygur Zizhiqu. Sinkiang Uighur Autonomous Region (Chinese Turkestan)
- (517.3) Mongolia. State of Mongolia
- (518) Manchuria (historical). Manchukuo (1931-45) Now partly in Inner Mongolia (517.4), as well as provinces below

- (519.3) North Korea. People's Democratic Republic of Korea
- (519.5) South Korea. Republic of Korea

**(52) Japan and adjacent islands**

- (520) Japan. Nippon (Nihon Koku)
- (527.1) Kuriles (Chishima-retto) (to 1945)
- (528) Island territories south of Japanese mainland
- (529) Taiwan. Republic of China
- (529.1) Taiwan (Formosa)
- (529.8) P'eng-hu Lieh-tao (Pescadores). Bokoto

**(53) Arabian states and territories**

- (532) Saudi Arabia. Kingdom of Saudi Arabia
- (533) Yemen. Republic of Yemen. 1990- Class here also Yemen (North); Yemen Arab Republic (to 1990); Yemen, Democratic; People's Democratic Republic of Yemen (to 1990)
- (535) Oman. Sultanate of Oman
- (536) East Arabian states (Gulf states)
- (536.2) United Arab Emirates 1971-. Formerly Trucial Coast/Trucial Oman/Trucial States
- (536.4) Qatar. State of Qatar
- (536.5) Bahrain. State of Bahrain
- (536.8) Kuwait. State of Kuwait

**(54) States of the Indian subcontinent**

- (540) India. Republic of India
- (540.31) Sikkim
- (541.31) Bhutan. Kingdom of Bhutan. Druk-yul
- (541.35) Nepal. Kingdom of Nepal
- (548.7) Sri Lanka. Democratic Socialist Republic of Sri Lanka
- (548.82) Maldives. Republic of the Maldives
- (549.1) Pakistan. Islamic Republic of Pakistan (Pakistan. Islam-i Jamhuriya-e Pakistan) 1971-
- (549.3) Bangladesh. People's Republic of Bangladesh (Bangladesh. Gana Praja-tantri Bangladesh)

**(55) Iran. Islamic Republic of Iran. Persia (historical) 1979-**

- (560) Turkey. Republic of Turkey
- (560.11) European Turkey
- (564.3) Cyprus. Republic of Cyprus
- (567) Iraq. Republic of Iraq (Al Jumhuriyah al 'Iraqiyah)
- (569.1) Syria. Syrian Arab Republic
- (569.3) Lebanon. Republic of Lebanon
- (569.4) Israel. State of Israel Palestine to 1948
- (569.5) Jordan. Hashemite Kingdom of Jordan. Urdunn

**(57) Former Asiatic USSR**

- (571.1/.5) Sibir'. Siberia
- (571) Russian Federation in Asia
- (574) Kazakhstan. Republic of Kazakhstan
- (575) Former Soviet Central Asia
- (575.1) Uzbekistan
- (575.2) Kyrgyzstan. Republic of Kyrgyzstan
- (575.3) Tajikistan. Republic of Tajikistan Formerly Tadzhijskaia S.S.R.
- (575.4) Turkmenistan Formerly Turkmenskaia S.S.R.
- (581) Afghanistan. Islamic State of Afghanistan (Afghanestan. Dowlat-e Eslami-ye Afghanestan)  
Also referred to as Islamic Republic of Afghanistan and Islamic Emirate of Afghanistan

**(59) South-east Asian states and territories**

- (591) Myanmar (Burma). Union of Myanmar
- (592.3) Singapore. Republic of Singapore
- (592.6) Brunei. State of Brunei Darussalam
- (593) Thailand. Kingdom of Thailand
- (594) Indonesia. Republic of Indonesia
- (595) Malaysia. Federation of Malaysia

- (596) Cambodia. Kingdom of Cambodia Formerly Kampuchea, Khmer Republic
- (597) Vietnam. Socialist Republic of Vietnam
- (597.3) South Vietnam. Republic of Vietnam (to 1975). Cochinchina (historical)
- (597.7) North Vietnam. Democratic Republic of Viet-Nam (to 1975). Tonkin (historical)
- (598) Laos. Lao People's Democratic Republic
- (599) Philippines. Republic of the Philippines

## **(6) Africa**

### **(61) North African states in general. Maghreb. Barbary States**

- (611) Tunisia. Republic of Tunisia
- (612) Libya. Libyan Arab Jamahiriya

### **(62) Egypt and Sudan**

- (620) Egypt. Arab Republic of Egypt. Misr
- (624) Sudan. Republic of the Sudan

### **(63) Ethiopia and Eritrea**

- (630) Ethiopia. Federal Democratic Republic of Ethiopia (Ityop'iya. Ityop'iya Federalawi Demokrasiyawi Ripeblik)
- (635) Eritrea. Republic of Eritrea

### **(64) Morocco. Kingdom of Morocco**

- (649) Islas Canarias (Canary Islands), Spanish, as part of Africa

## **(65) Algeria. Democratic and Popular Republic of Algeria (Al Jaza'ir. Al Jumhuriyah al Jaza'iriyah ad Dimuqratiyah ash Sha'biyah)**

### **(66) West African states and territories**

- (661.2) Mauritania. Islamic and African Republic of Mauritania
- (662.1) Mali. Republic of Mali
- (662.5) Burkina Faso. People's Democratic Republic of Burkina Faso
- (662.6) Niger. Republic of Niger
- (662) Western Sudan and Niger Territories
- (663) Senegal. Republic of Senegal
- (664) Sierra Leone. Republic of Sierra Leone
- (665) Upper Guinea states and territories
- (665.1) Gambia. Republic of the Gambia
- (665.2) Guinea. Republic of Guinea
- (665.7) Guinea-Bissau. Republic of Guinea-Bissau Portuguese Guinea to 1974
- (665.8) Cape Verde. Republic of Cape Verde
- (666.2) Liberia. Republic of Liberia
- (666.8) Côte d'Ivoire (Ivory Coast). Republic of Côte d'Ivoire
- (667) Ghana. Republic of Ghana
- (668.1) Togo. Republic of Togo
- (668.2) Benin. Republic of Benin
- (669.1) Nigeria. Federal Republic of Nigeria

### **(67) Equatorial, central and eastern African states and territories**

- (671.1) Cameroon. Republic of Cameroon
- (671.8) Equatorial Guinea. Republic of Equatorial Guinea
- (672.1) Gabon. Gabonese Republic
- (672.4) Congo. Republic of the Congo
- (673) Angola. Republic of Angola (Angola. Republica de Angola)
- (674) Inner African (central African) territories
- (674.1) Central African Republic
- (674.3) Chad. Republic of Chad Territory of French Equatorial Africa to 1959
- (675) Democratic Republic of Congo
- (675.97) Burundi. Republic of Burundi
- (675.98) Rwanda. Republic of Rwanda
- (676.1) Uganda. Republic of Uganda
- (676.2) Kenya. Republic of Kenya
- (677) Somalia. Somali Democratic Republic



- (677.1) Djibouti. Republic of Djibouti
- (678) Tanzania. United Republic of Tanzania
- (679) Mozambique. Republic of Mozambique
- (68) States and territories of southern Africa**
- (680) South Africa. Republic of South Africa
- (684) KwaZulu/Natal (KwaZulu-Natal) Formerly Natal (KwaZulu/Natal)
- (685) Free State Formerly Orange Free State
- (687) Kaap die Goeie Hoop. Cape of Good Hope (historical)
- (688.1) Namibia
- (688.7) Swaziland
- (689.1) Zimbabwe. Republic of Zimbabwe
- (689.4) Zambia. Republic of Zambia Northern Rhodesia to 1964
- (689.7) Malawi. Republic of Malawi
- (69) African islands of the Indian and South Atlantic oceans**
- (691) Madagascar. Democratic Republic of Madagascar
- (694) Islands north of Madagascar
- (696) Seychelles. Republic of Seychelles
- (697) British Indian Ocean Territory (BIOT) (UK)
- (698) Mascarene Islands
- (698.1) Réunion (France) Formerly Ile de Bourbon
- (698.2) Mauritius. Republic of Mauritius
- (699) Outlying Islands in the South Indian and South Atlantic Oceans

## **(7) North and Central America**

### **(71) Canada**

- (711) British Columbia
- (712.3) Alberta
- (712.4) Saskatchewan
- (712.7) Manitoba
- (713) Ontario. Upper Canada 1791-1841
- (714) Quebec. Lower Canada 1791-1841
- (715) New Brunswick
- (716) Nova Scotia
- (717) Prince Edward Island
- (718) Newfoundland Province. Newfoundland, Labrador
- (719) Yukon. Northwest Territories. Nunavut
- (719.1) Yukon Territory
- (719.2) Northwest Territories
- (719.3) Nunavut

### **(72) Mexico. Central American states. Caribbean territories**

- (728) Central American states
- (728.1) Guatemala. Republic of Guatemala
- (728.2) Belize. British Honduras to 1973
- (728.3) Honduras. Republic of Honduras
- (728.4) El Salvador. Republic of El Salvador
- (728.5) Nicaragua. Republic of Nicaragua
- (728.6) Costa Rica. Republic of Costa Rica
- (728.7) Panama. Republic of Panama
- (729) Caribbean territories. West Indies (Antilles)
- (729.1) Cuba. Republic of Cuba
- (729.2) Jamaica
- (729.3) Dominican Republic
- (729.4) Haiti. Republic of Haiti
- (729.5) Puerto Rico. Commonwealth of Puerto Rico (USA) USA 1899 to 1952; associate of USA from 1952
- (729.61) Bahamas. Commonwealth of the Bahamas

- (729.68) Turks and Caicos Islands (UK)
- (729.7/.8) Lesser Antilles (Eastern Caribbean)
- (729.86) Barbados
- (729.87) Trinidad and Tobago. Republic of Trinidad and Tobago
- (729.88) Netherlands Antilles (Dutch Antilles)
- (729.9) Bermudas (Somers Islands) (UK)

**(73) United States of America (USA).**

The District of Columbia and the federal capital are classed at (735.3), and the state capitals are listed with the counties where they are located, with the addition of the words '(state capital)'; but, if preferred, they can be classed at federal or state level, using the special auxiliary -25, from (1-25) Class protected areas such as National Parks and National Wildlife Refuges preferably with the state or area in which they are situated, adding the subdivisions of (1-751) (Table 1e) of UDC. Class collective works here.

- (734) States of north-eastern USA
  - (734.1) Maine
  - (734.2) New Hampshire
  - (734.3) Vermont
  - (734.4) Massachusetts
  - (734.5) Rhode Island
  - (734.6) Connecticut
  - (734.7) New York (state)
  - (734.8) Pennsylvania
  - (734.9) New Jersey
- (735) States of the south-eastern USA (South Atlantic states). Class here the southern states
  - (735.1) Delaware
  - (735.2) Maryland
  - (735.3) District of Columbia. Washington DC
  - (735.4) West Virginia
  - (735.5) Virginia
  - (735.6) North Carolina
  - (735.7) South Carolina
  - (735.8) Georgia
  - (735.9) Florida
- (736) States of the south central USA. Class here the Old South-west
  - (736.1) Alabama
  - (736.2) Mississippi
  - (736.3) Louisiana
  - (736.4) Texas
  - (736.6) Oklahoma
  - (736.7) Arkansas
  - (736.8) Tennessee
  - (736.9) Kentucky
- (737) States of the north central USA. Class here the Middle West
  - (737.1) Ohio
  - (737.2) Indiana
  - (737.3) Illinois
  - (737.4) Michigan
  - (737.5) Wisconsin
  - (737.6) Minnesota
  - (737.7) Iowa
  - (737.8) Missouri
- (738) States of the western USA. Class here the West
  - (738.1) Kansas
  - (738.2) Nebraska
  - (738.3) South Dakota
  - (738.4) North Dakota
  - (738.6) Montana
  - (738.7) Wyoming

- (738.8) Colorado
- (738.9) New Mexico
- (739) States of the Great Basin and Pacific Slope region of the USA, and the Pacific Ocean. Class here the New South-west
- (739.1) Arizona
- (739.2) Utah
- (739.3) Nevada
- (739.4) California
- (739.5) Oregon
- (739.6) Idaho
- (739.7) Washington
- (739.8) Alaska
- (739.9) Hawaii

## **(8) South America. States and regions of South America. Latin America**

### **(81) Brazil. Federative Republic of Brazil**

### **(82) Argentina. Argentine Republic**

- (821/822) Litoral
- (829.1) Falkland Islands. Falkland Islands and Dependencies (UK)

### **(83) Chile. Republic of Chile**

### **(84) Bolivia. Republic of Bolivia**

### **(85) Peru. Republic of Peru**

- (866) Ecuador. Republic of Ecuador
- (866.4) Galápagos

### **(87) Venezuela. Republic of Venezuela**

### **(88) The Guianas**

- (881) Guyana. Cooperative Republic of Guyana
- (882) French Guiana (Guyane française). Department of Guiana (France)
- (883) Suriname. Republic of Suriname
- (899) Uruguay. Eastern Republic of Uruguay

## **(9) States and regions of the South Pacific and Australia. Arctic. Antarctic**

[For the South Pacific, Australia, the Arctic and the Antarctic as physiogeographic regions, and for the physiogeographic units of these regions, use (292.94/.99), (292.91/.93), (292.2) and (292.3) and their subdivisions]

- (931) New Zealand
- (932) New Caledonia. Territory of New Caledonia (France)
- (934) Vanuatu. Republic of Vanuatu
- (935) Solomon Islands
- (94) Australia. Commonwealth of Australia**
- (941) Western Australia
- (942) South Australia and the Northern Territory
- (943) Queensland
- (944) New South Wales
- (945) Victoria
- (946) Tasmania
- (948) Outlying islands of Australia
- (954) Papua New Guinea. Independent State of Papua New Guinea
- (961/964) Polynesia. States and regions of Polynesia
- (961.1) Fiji. Republic of Fiji
- (961.2) Tonga. Kingdom of Tonga
- (961.31) Samoa. Independent State of Samoa (Samoa. Malo Sa'oloto Tuto'atasi o Samoa)  
Formerly: Independent State of Western Samoa (Malolotuto'atasi o Samoa i Sisifo)
- (961.33) American Samoa (USA)

- (961.4) Tuvalu Formerly Ellice Islands
- (962.3) Cook Islands (New Zealand)
- (963) French Polynesia. Territory of French Polynesia. Territoire de la Polynésie Française (France)
- (966/968) Micronesia. States and regions of Micronesia
- (966) Trust Territory of the Pacific Islands (USA)
- (966.4) Marshall Islands. Republic of the Marshall Islands
- (967.2) Guam (USA)
- (968.2) Kiribati. Republic of Kiribati Formerly Gilbert Islands
- (968.5) Nauru. Republic of Nauru

**(97) Isolated Islands of the Pacific Ocean Class here those Pacific Islands which are not be found elsewhere in (5/9)**

**(98) Arctic territories**

- (984) European Arctic islands
- (985) Russian Arctic, including islands
- (987) North American Arctic, including islands
- (988) Greenland (Gronland) (Denmark)

**(99) Antarctic territories.** South Polar regions. In accordance with the 1961 Antarctic treaty, the territorial claims in Antarctica are now in abeyance. However, the colon combinations formerly listed here continue to be available at the user's discretion

## **Appendix C**

### **Selection of insects with special interest to forest science**





## Alphabetical index to subdivisions of 145.7 Insecta s.l. (= Hexapoda\*\*), i.e. “insects” [UDC 595.7]

The arrangement of orders and families in Appendix C of the ODC (1954) was based on A.D. Imms' *General Textbook of Entomology* (7<sup>th</sup> Edition, 1948). The revision presented here is extremely conservative, preserving original class numbers from the ODC. The circumscription of the class number has been interpreted to better represent more modern understandings of insect classification, at least at the 'order' level. At the 'family' level, progress in understanding phyletic relationships between different insect taxa has resulted in considerable changes since Imms' original scheme. Adoption of a more natural classification of hexapod taxa would have necessitated the abandonment of the original scheme. Such a move might be premature, given the present lack of consensus as to higher-level relationships of at least some important insect groups. Current initiatives to resolve phyletic relationships using genetic, developmental and morphological data may alter this situation soon. In the meantime, the original scheme has been updated by the addition of family names in current use and/or since Imms' day. These include some taxa considered by some to be of subfamily rank. Note that some class numbers grouped together families (and orders, in the case of 145.7x09) now considered to be distantly related, at least in some classification schemes. Also, some closely related taxa may be widely separated from each other. Taxa not included in the original scheme have been grouped with near-related taxa where possible.

References consulted included, *inter alia*: N.M. Downie & R.H. Arnett, Jr. (1996) *The Beetles of Northeastern North America*; J.B. Heppner (1998) *Classification of Lepidoptera*; J.F. Lawrence & A.F. Newton, Jr. (1995) *Families and Subfamilies of Coleoptera ...*; J.F. McAlpine (ed.) (1981, 1987, 1989) *Manual of Nearctic Diptera*; V.H. Resh & R.T. Cardé (eds.) (2003) *Encyclopedia of Insects*; O.W. Richards & R.G. Davies (1977) *Imms' General Textbook of Entomology, 10<sup>th</sup> Edition* (now outdated, but used for bridging purposes); and resources on the following websites: Association for Tropical Lepidoptera ([www.troplep.org](http://www.troplep.org)); The Coleopterists Society ([www.coleoptera.org](http://www.coleoptera.org)); The Diptera Site ([www.diptera.org](http://www.diptera.org)); and Tree of Life Web Project ([www.tolweb.org](http://www.tolweb.org)). The latter provides access to more natural classifications of insects than provided here.

New taxa or orthographic variants noted in the FDC (1992) are indicated by \*. Taxon names added in this revision (whether archaic or current, and including orthographic variants) are indicated by \*\*. In the two instances where new GFDC class numbers have been added, this is indicated by \*\*\*. As in the original ODC, orders in bold are subdivided numerically to family (and selected higher taxa).

### Orders

- 145.7x01 Thysanura
- 145.7x02 Diplura\*\* and Protura [UDC 595.711]
- 145.7x03 Collembola
- 145.7x04 'orthopteroid' insects\*\*, in part (= "**Orthoptera**" sensu lato)
- 145.7x05 Dermaptera
- 145.7x06 Plecoptera
- 145.7x07 **Isoptera**
- 145.7x08 Embiidina\*\* (= Embioptera)
- 145.7x09 Psocoptera,
- 145.7x10 Phthiraptera\*\*
- 145.7x11 Ephemeroptera
- 145.7x12 Odonata
- 145.7x13 Thysanoptera
- 145.7x14 **Hemiptera**
- 145.7x15 Neuropterida\*\*
- 145.7x16 Mecoptera
- 145.7x17 Trichoptera
- 145.7x18 **Lepidoptera**
- 145.7x19 **Coleoptera**
- 145.7x20 Strepsiptera
- 145.7x21 **Hymenoptera**
- 145.7x22 **Diptera**
- 145.7x23 Siphonaptera\*\* (= Aphaniptera)





# GFDC Appendix C: Ordered by Class Number

All Class Numbers prefixed by 145.7x

| Taxon                  | Class Number |                     |       |
|------------------------|--------------|---------------------|-------|
| <b>A</b>               |              |                     |       |
| Acanaloniidae**        | 14.32        | Alydidae**          | 14.02 |
| Acanthoceridae**       | 19.96        | Amatidae            | 18.73 |
| Acanthocnemidae**      | 19.57        | Amblycera**         | 10    |
| Acanthococcidae**      | 14.39        | Amitermitidae**     | 07.3  |
| Acanthomeridae         | 22.16        | Amorphoscelididae** | 04.3  |
| Acanthopteroctetidae** | 18.01        | Amphitheridae       | 18.24 |
| Acanthosomatidae**     | 14.01        | Amphizoidae         | 19.03 |
| Acartophthalmidae**    | 22.53        | Ampulicidae         | 21.7  |
| Achilidae**            | 14.35        | Anaxyelidae**       | 21.02 |
| Achilixiidae**         | 14.35        | Andesianidae**      | 18.21 |
| Acleridae**            | 14.39        | Andrenidae          | 21.8  |
| Aclopidae**            | 19.96        | Anischiidae**       | 19.67 |
| Acrididae              | 04.5         | Anisolabididae**    | 05    |
| Acroceridae            | 22.18        | Anisopodidae**      | 22.13 |
| Acrolepiidae**         | 18.11        | Anisoptera**        | 12    |
| Acrolophidae**         | 18.19        | Anisotomidae**      | 19.14 |
| Acrydiidae**           | 04.5         | Anobiidae           | 19.60 |
| Aculagnathidae**       | 19.32        | Anoeciidae**        | 14.38 |
| Aculeata               | 21.6/8       | Anomoeotidae**      | 18.47 |
| Adeheterothripidae**   | 13           | Anomosetidae**      | 18.02 |
| Adelgidae*             | 14.38        | Anoplura            | 10    |
| Adelidae               | 18.20        | Anostomatidae**     | 04.6  |
| Adephaga**             | 19.01/09     | Anthelidae**        | 18.51 |
| Aderidae**             | 19.83        | Anthicidae          | 19.84 |
| Adiheterothripidae**   | 13           | Anthocoridae        | 14.16 |
| Adimeridae             | 19.41        | Anthomyiidae        | 22.56 |
| Aegeriidae             | 18.06        | Anthomyzidae**      | 22.48 |
| Aegialitidae           | 19.50        | Anthophoridae       | 21.8  |
| Aelothripidae**        | 13           | Anthribidae         | 19.90 |
| Aenictopecheidae**     | 14.11        | Apatelodidae**      | 18.56 |
| Aepophilidae           | 14.10        | Apatidae            | 19.62 |
| Aetalionidae**         | 14.30        | Aphalaridae**       | 14.36 |
| Agaonidae              | 21.2         | Aphaniptera         | 23    |
| Agaontidae**           | 21.2         | Aphelinidae**       | 21.2  |
| Agaristidae            | 18.75        | Aphelocheiridae**   | 14.23 |
| Agathiphagidae**       | 18.01        | Aphididae           | 14.38 |
| Agdistidae             | 18.40        | Aphodiidae          | 19.96 |
| Aglycyderidae**        | 19.93        | Aphrophoridae**     | 14.29 |
| Agonoxenidae**         | 18.12        | Aphylidae**         | 14.01 |
| Agromyzidae            | 22.37        | Apicotermiteidae**  | 07.3  |
| Agyrtidae**            | 19.14        | Apidae              | 21.8  |
| Aididae**              | 18.45        | Apioceratidae**     | 22.20 |
| Aleurodidae            | 14.37        | Apioceridae         | 22.20 |
| Alexiidae**            | 19.42        | Apiomorphidae**     | 14.39 |
| Aleyrodidae            | 14.37        | Apionidae**         | 19.89 |
| Alleculidae**          | 19.74        | Apoprogonidae**     | 18.69 |
| Allocorynidae**        | 19.91        | Apsilocephalidae**  | 22.24 |
| Allotriidae            | 21.3         | Apystomyidae**      | 22.25 |
| Alucitidae             | 18.26        | Apystomyiidae**     | 22.25 |
|                        |              | Aradidae            | 14.06 |
|                        |              | Araeopidae**        | 14.33 |
|                        |              | Arbelidae           | 18.44 |

|                     |              |                     |           |
|---------------------|--------------|---------------------|-----------|
| Archaeognatha**     | 01           | Blephariceridae**   | 22.10     |
| Archeocrypticidae** | 19.64        | Blepharoceridae     | 22.10     |
| Archeostemata**     | 19.10, 19.59 | Blissidae**         | 14.04     |
| Archostemata**      | 19.10, 19.59 | Boganiidae**        | 19.27     |
| Arctiidae           | 18.74        | Bolboceratidae**    | 19.96     |
| Argidae             | 21.05        | Bombidae            | 21.8      |
| Argyresthiidae      | 18.11        | Bombycidae          | 18.56     |
| Arixeniidae**       | 05           | Bombyliidae         | 22.25     |
| Arrhenophanidae*    | 18.41        | Borboridae          | 22.52     |
| Artematopidae**     | 19.49        | Borboropsidae**     | 22.54     |
| Artheneidae**       | 14.04        | Boridae**           | 19.76     |
| Aschiza             | 22.28/32     | Bostrichidae        | 19.62     |
| Asilidae            | 22.23        | Bostrychidae        | 19.62     |
| Aspidytidae**       | 19.03        | Bothrideridae**     | 19.40     |
| Asteiidae**         | 22.48        | Brachodidae**       | 18.06     |
| Asterolecaniidae**  | 14.39        | Brachycera          | 22.14/.26 |
| Atelestidae**       | 22.26        | Brachyplatidae**    | 14.01     |
| Ateluridae**        | 01           | Brachypsectridae**  | 19.49     |
| Athericidae**       | 22.15        | Brachypteridae**    | 19.29     |
| Attacidae**         | 18.52        | Braconidae          | 21.1      |
| Attelabidae**       | 19.91        | Bradynobaenidae**   | 21.6      |
| Attevidae**         | 18.11        | Brahmaeidae         | 18.53     |
| Auchenorrhyncha**   | 14.28/35     | Braulidae           | 22.62     |
| Aulacidae**         | 21.1         | Brenthidae          | 19.89     |
| Aulacigastridae**   | 22.48        | Brentidae**         | 19.89     |
| Australimyziidae**  | 22.40        | Bruchelidae**       | 19.90     |
| Austrocynipidae**   | 21.3         | Bruchidae           | 19.86     |
| Austroleptidae**    | 22.15        | Bucculatricidae**   | 18.14     |
| Austroniidae**      | 21.4         | Bucculatrigenidae** | 18.14     |
| Axiidae**           | 18.66        | Buprestidae         | 19.66     |
| Axiniidae**         | 22.57        | Byrrhidae           | 19.45     |
| Axymyiidae**        | 22.08        | Byturidae           | 19.28     |

## B

|                    |       |
|--------------------|-------|
| Batrachedridae**   | 18.13 |
| Beesoniidae**      | 14.39 |
| Belidae**          | 19.93 |
| Belohinidae**      | 19.96 |
| Belostomatidae     | 14.24 |
| Belytidae          | 21.4  |
| Bembecidae         | 21.7  |
| Bembicidae**       | 21.7  |
| Bengaliidae**      | 22.57 |
| Beonotidae**       | 22.06 |
| Berytidae          | 14.03 |
| Bethylidae         | 21.6  |
| Bibionidae         | 22.08 |
| Biphyllidae**      | 19.28 |
| Biturritiidae**    | 14.30 |
| Blaberidae**       | 04.2  |
| Blasticotomidae**  | 21.05 |
| Blasticotommidae** | 21.05 |
| Blastobasidae      | 18.09 |
| Blastodacnidae**   | 18.12 |
| Blattaria**        | 04.2  |
| Blattellidae**     | 04.2  |
| Blattidae          | 04.2  |
| Blattodea**        | 04.2  |

## C

|                    |                  |
|--------------------|------------------|
| Caelifera**        | 04.5             |
| Callaphididae**    | 14.38            |
| Callidulidae       | 18.58            |
| Calliphoridae      | 22.57            |
| Callirhipidae**    | 19.49            |
| Calobatidae**      | 22.42            |
| Calophyidae**      | 14.36            |
| Calotermitidae     | 07.2             |
| Calypttratae**     | 22.41, 22.56/.61 |
| Camillidae**       | 22.38            |
| Campichoetidae**   | 22.39            |
| Canacidae**        | 22.40            |
| Canopidae**        | 14.01            |
| Cantharidae        | 19.55            |
| Canthyloscelidae** | 22.02            |
| Capsidae           | 14.18            |
| Carabidae          | 19.02            |
| Carayonemidae**    | 14.39            |
| Carcinophoridae**  | 05               |
| Caridae**          | 19.91            |
| Carnidae**         | 22.40            |
| Carposinidae       | 18.30            |
| Carsidaridae**     | 14.36            |
| Carthaeidae**      | 18.56            |

|                     |       |                    |       |
|---------------------|-------|--------------------|-------|
| Castniidae          | 18.48 | Cimicidae          | 14.14 |
| Catantopidae**      | 04.5  | Cioidae            | 19.64 |
| Cataprochotidae**   | 19.34 | Cisidae**          | 19.64 |
| Cateretidae**       | 19.29 | Cissidae           | 19.64 |
| Catoprochotidae     | 19.34 | Cistelidae         | 19.74 |
| Cavognathiidae**    | 19.35 | Citheroniidae      | 18.54 |
| Cebrionidae**       | 19.67 | Cixiidae**         | 14.33 |
| Cecidomyiidae*      | 22.06 | Clambidae**        | 19.53 |
| Cecidomyiidae       | 22.06 | Clastopteridae**   | 14.29 |
| Cecidosidae**       | 18.20 | Cleonymidae        | 21.2  |
| Celyphidae          | 22.49 | Cleridae           | 19.57 |
| Cephaloidae**       | 19.81 | Clusiidae**        | 22.53 |
| Cephaloplectidae**  | 19.17 | Clusioididae**     | 22.53 |
| Cephidae            | 21.01 | Cnemospathidae**   | 22.54 |
| Cerambycidae        | 19.88 | Cneoglossidae**    | 19.49 |
| Ceraphronidae       | 21.4  | Coccidae           | 14.39 |
| Ceraphronidae**     | 21.4  | Coccinellidae      | 19.43 |
| Ceratinidae         | 21.8  | Cochlididae        | 18.46 |
| Ceratocampidae      | 18.54 | Cochliidiidae**    | 18.46 |
| Ceratocanthidae**   | 19.96 | Cochylidae**       | 18.29 |
| Ceratocombidae      | 14.16 | Coelopidae**       | 22.51 |
| Ceratopogonidae     | 22.05 | Coenomyiidae**     | 22.15 |
| Cercophanidae**     | 18.53 | Coleophoridae      | 18.13 |
| Cercopidae          | 14.29 | Coleoptera         | 19    |
| Cerococcidae**      | 14.39 | Coleorrhyncha***   | 14.40 |
| Cerophytidae**      | 19.67 | Collembola         | 03    |
| Cerylonidae**       | 19.40 | Colletidae         | 21.8  |
| Cetoniidae**        | 19.96 | Colobathristidae** | 14.03 |
| Chaeteessidae**     | 04.3  | Colydiidae         | 19.40 |
| Chaetosomatidae**   | 19.26 | Conchaspidae**     | 14.39 |
| Chaitophoridae**    | 14.38 | Conchylidae        | 18.29 |
| Chalcidectidae**    | 21.2  | Cononotidae**      | 19.84 |
| Chalcididae         | 21.2  | Conopidae          | 22.33 |
| Chalcodryidae**     | 19.69 | Copromorphidae     | 18.25 |
| Chamaemyiidae**     | 22.36 | Coptosomatidae**   | 14.01 |
| Chaoboridae**       | 22.04 | Cordiluridae**     | 22.41 |
| Charilidae**        | 04.5  | Cordyluridae       | 22.41 |
| Charipidae          | 21.3  | Coreidae           | 14.02 |
| Chauliognathidae**  | 19.55 | Corethrellidae**   | 22.04 |
| Chelisochidae**     | 05    | Corixidae          | 14.27 |
| Chelonariidae**     | 19.49 | Corizidae**        | 14.02 |
| Chermesidae**       | 14.38 | Corylophidae       | 19.20 |
| Chermidae**         | 14.36 | Cosmopterigidae**  | 18.08 |
| Chimabachidae**     | 18.09 | Cosmoptyrigidae    | 18.08 |
| Chironomidae        | 22.05 | Cossidae           | 18.05 |
| Chiropteromyzidae** | 22.54 | Crabronidae        | 21.7  |
| Chlidanotidae       | 18.31 | Crambidae          | 18.36 |
| Chloropidae         | 22.40 | Cramptonomyiidae** | 22.08 |
| Choreutidae**       | 18.06 | Cremifaniidae**    | 22.36 |
| Chrysididae         | 21.6  | Crinopterygidae**  | 18.20 |
| Chrysomelidae       | 19.87 | Crowsonellidae**   | 19.10 |
| Chrysopolomidae     | 18.43 | Crowsoniellidae**  | 19.10 |
| Chyromyiidae**      | 22.52 | Cryptocercidae**   | 04.2  |
| Cicadellidae        | 14.31 | Cryptochetidae**   | 22.40 |
| Cicadidae           | 14.28 | Cryptomeridae**    | 19.53 |
| Cicindelidae        | 19.01 | Cryptophagidae     | 19.33 |
| Ciidae**            | 19.64 | Cryptophilidae**   | 19.32 |
| Cimbicidae          | 21.05 | Cryptorhamphidae** | 14.04 |

|                     |          |                      |         |
|---------------------|----------|----------------------|---------|
| Cryptostemmatidae** | 14.15    | Diphyllostomatidae** | 19.96   |
| Ctenostylidae**     | 22.34    | Diplura**            | 02      |
| Ctenostylidae**     | 22.45    | Diprionidae*         | 21.05   |
| Ctenuchidae**       | 18.73    | Dipsocoridae         | 14.15   |
| Cubitermitidae**    | 07.3     | Diptera              | 22      |
| Cucujidae           | 19.30    | Discolomatidae**     | 19.42   |
| Culicidae           | 22.04    | Discolomidae**       | 19.42   |
| Cupedidae           | 19.10    | Disteniidae**        | 19.88   |
| Cupesidae           | 19.10    | Ditomyiidae**        | 22.07   |
| Curculionidae       | 19.91    | Dixidae              | 22.03   |
| Curtonotidae**      | 22.38    | Doidae**             | 18.72   |
| Cuterebridae**      | 22.58    | Dolichopodidae       | 22.27   |
| Cyathoceridae       | 19.47    | Douglasiidae         | 18.12   |
| Cyclaxyridae**      | 19.30    | Drepanidae           | 18.66   |
| Cyclidiidae**       | 18.66    | Drepanosiphidae**    | 14.38   |
| Cyclorrhapha        | 22.28/62 | Drepanulidae         | 18.66   |
| Cyclotornidae       | 18.23    | Drilidae**           | 19.55   |
| Cynodidae           | 18.13    | Drosophilidae        | 22.38   |
| Cydnidae**          | 14.01    | Dryinidae            | 21.6    |
| Cylindrachetidae**  | 04.5     | Dryomyzidae**        | 22.55   |
| Cylindrococcidae**  | 14.39    | Dryopidae            | 19.49   |
| Cylindrotomidae**   | 22.01    | Dudgeoneidae**       | 18.05   |
| Cymatophoridae      | 18.67    | Dynastidae**         | 19.96   |
| Cymbidae            | 18.74    | Dytiscidae           | 19.06   |
| Cymidae**           | 14.04    |                      |         |
| Cynipidae           | 21.3     | <b>E</b>             |         |
| Cyphonidae**        | 19.53    | Ectrephidae          | 19.61   |
| Cypselidae**        | 22.52    | Eginiidae**          | 22.56   |
| Cypselomatidae**    | 22.42    | Elacatidae**         | 19.72   |
| Cyrtidae            | 22.18    | Elachistidae         | 18.12   |
| Cyrtocoridae**      | 14.01    | Elasmidae            | 21.2    |
| Cyrtosiidae**       | 22.25    | Elasmodemidae**      | 14.13   |
|                     |          | Elateridae           | 19.67   |
| <b>D</b>            |          | Elmidae**            | 19.49   |
| Dacoderidae**       | 19.72    | Elmididae**          | 19.49   |
| Dactylopiidae**     | 14.39    | Elminthidae**        | 19.49   |
| Dalceridae          | 18.49    | Elodidae**           | 19.53   |
| Dascillidae         | 19.52    | Embiidina**          | 08      |
| Dasyceridae**       | 19.11    | Embioptera           | 08      |
| Dasypodidae**       | 21.8     | Embolemididae**      | 21.6    |
| Dasytidae**         | 19.56    | Empidae              | 22.26   |
| Decliinidae**       | 19.53    | Empididae**          | 22.26   |
| Delphacidae         | 14.33    | Empusidae**          | 04.3    |
| Depressariidae**    | 18.09    | Encyrtidae           | 21.2    |
| Derbidae            | 14.35    | Endecatomiidae**     | 19.62   |
| Dermaptera          | 05       | Endomychidae         | 19.42   |
| Dermestidae         | 19.44    | Endromidae           | 18.59   |
| Derodontidae        | 19.37    | Enicocephalidae**    | 14.11   |
| Deuterophlebiidae   | 22.11    | Ensifera**           | 04.6/.7 |
| Diadocidiidae**     | 22.07    | Entognatha**         | 02      |
| Diapriidae          | 21.4     | Epermeniidae         | 18.16   |
| Diaspididae**       | 14.39    | Ephemeroptera        | 11      |
| Diastatidae**       | 22.39    | Ephydridae           | 22.39   |
| Dictyopharidae**    | 14.34    | Epicopeiidae**       | 18.69   |
| Dictyoptera**       | 04.2/.3  | Epiplemidae          | 18.70   |
| Dinidoridae**       | 14.01    | Epipygidae**         | 14.29   |
| Diopsidae           | 22.50    | Epipyropidae         | 18.22   |
| Dioptidae**         | 18.72    | Eremiaphilidae**     | 04.3    |

|                     |           |                    |       |
|---------------------|-----------|--------------------|-------|
| Erinnidae**         | 22.14/.15 | Geocoridae**       | 14.04 |
| Eriococcidae**      | 14.39     | Geometridae        | 18.68 |
| Eriocottidae**      | 18.41     | Geomyzidae         | 22.48 |
| Eriocraniidae**     | 18.01     | Georissidae**      | 19.48 |
| Eriopteridae**      | 22.01     | Georyssidae        | 19.48 |
| Erotylidae          | 19.32     | Geotrupidae**      | 19.96 |
| Erycinidae          | 18.61     | Gerridae**         | 14.09 |
| Ethmiidae**         | 18.09     | Glaphyridae**      | 19.96 |
| Eucharidae          | 21.2      | Glaresidae**       | 19.96 |
| Eucharitidae**      | 21.2      | Glossinidae**      | 22.59 |
| Eucinetidae**       | 19.53     | Glutopidae**       | 22.17 |
| Eucleidae           | 18.46     | Glyphipterigidae** | 18.18 |
| Eucnemidae          | 19.67     | Glyphipterygidae   | 18.18 |
| Eucoilidae          | 21.3      | Gnostidae**        | 19.60 |
| Eucosmidae          | 18.27     | Gobryidae**        | 22.50 |
| Eudicronychidae**   | 19.67     | Gracilariidae      | 18.14 |
| Euglenidae**        | 19.83     | Gracillariidae**   | 18.14 |
| Euglossidae         | 21.8      | Greenideidae**     | 14.38 |
| Eulichadidae**      | 19.49     | Gryllacrididae**   | 04.6  |
| Eulophidae          | 21.2      | Gryllidae          | 04.7  |
| Eumastacidae**      | 04.5      | Grylloblattidae    | 04.1  |
| Eumenidae**         | 21.6      | Grylloblattodea**  | 04.1  |
| Eupelmidae**        | 21.2      | Grylloidea**       | 04.7  |
| Euphasmida**        | 04.4      | Gryllotalpidae**   | 04.7  |
| Eupistidae**        | 18.13     | Gyrinidae          | 19.07 |
| Eupterotidae        | 18.56     |                    |       |
| Eurybrachidae**     | 14.32     | <b>H</b>           |       |
| Eurychoromyiidae**  | 22.49     | Haglidae**         | 04.6  |
| Eurygnathomyiidae** | 22.45     | Halictidae**       | 21.8  |
| Eurymelidae**       | 14.31     | Halimococcidae**   | 14.39 |
| Eurypogonidae**     | 19.49     | Haliplidae         | 19.05 |
| Eurystethidae**     | 19.72     | Hebridae           | 14.08 |
| Eurytomidae         | 21.2      | Hedylidae**        | 18.68 |
| Euxestidae**        | 22.34     | Helcomyzidae**     | 22.55 |
| Evaniidae           | 21.1      | Heleidae**         | 22.05 |
| Evocoidae**         | 22.24     | Heleomyzidae**     | 22.54 |
| Exeretonevridae**   | 22.15     | Helicoboscidae**   | 22.57 |
| Exoporia**          | 18.02/.04 | Heliodinidae       | 18.17 |
|                     |           | Heliozelidae       | 18.12 |
| <b>F</b>            |           | Helmidae**         | 19.49 |
| Fanniidae**         | 22.56     | Helminthidae**     | 19.49 |
| Fauriellidae**      | 13        | Helodidae          | 19.53 |
| Fergusoninidae**    | 22.37     | Helomyzidae        | 22.54 |
| Fideliidae**        | 21.8      | Heloridae          | 21.4  |
| Figitidae           | 21.3      | Helosciomyzidae**  | 22.55 |
| Flatidae            | 14.32     | Helotidae          | 19.27 |
| Forficulidae        | 05        | Helotrephidae      | 14.20 |
| Formicidae          | 21.5      | Hemileucidae       | 18.52 |
| Fulgoridae          | 14.34     | Hemimeridae**      | 05    |
| Fungivoridae**      | 22.07     | Hemipeplidae**     | 19.76 |
|                     |           | Hemiptera          | 14    |
| <b>G</b>            |           | Henicocephalidae   | 14.11 |
| Galleriidae         | 18.35     | Henicoridae**      | 14.04 |
| Gasterophilidae**   | 22.58     | Hepialidae         | 18.02 |
| Gasteruptiidae**    | 21.1      | Hermatobatidae**   | 14.09 |
| Gelastocoridae**    | 14.22     | Hesperiidae        | 18.65 |
| Gelechiidae         | 18.07     | Hesperinidae**     | 22.07 |
| Gengidae**          | 14.32     | Heterobathmiidae** | 18.01 |

|                     |           |                     |       |
|---------------------|-----------|---------------------|-------|
| Heteroceridae       | 19.51     | Ischnocera**        | 10    |
| Heterocheilidae**   | 22.55     | Isometopidae**      | 14.18 |
| Heterogastridae**   | 14.04     | Isoptera            | 07    |
| Heterogeneidae      | 18.46     | Issidae**           | 14.32 |
| Heterogenidae**     | 18.46     | Ithyceridae**       | 19.91 |
| Heterogynidae**     | 21.7      | Itonididae          | 22.06 |
| Heterogynidae       | 18.42     |                     |       |
| Heteromyzidae**     | 22.54     | <b>J</b>            |       |
| Heteroneuridae      | 22.53     | Jacobsoniidae**     | 19.44 |
| Heteroptera         | 14.01/.27 | Jassidae            | 14.31 |
| Heterostomidae**    | 22.15     | Joppeicidae**       | 14.13 |
| Heterothripidae**   | 13        |                     |       |
| Hilarimorphidae**   | 22.25     | <b>K</b>            |       |
| Himantopteridae**   | 18.47     | Kalotermitidae      | 07.2  |
| Hippoboscidae       | 22.59     | Karumiidae**        | 19.52 |
| Histeridae          | 19.22     | Kateretidae**       | 19.29 |
| Hobartiidae**       | 19.35     | Kermesidae**        | 14.39 |
| Hodotermitidae      | 07.2      | Keroplastidae**     | 22.07 |
| Holcopogonidae**    | 18.09     | Kerriidae**         | 14.39 |
| Homalidae**         | 19.55     | Kinnaridae**        | 14.33 |
| Homoptera           | 14.28/.39 |                     |       |
| Homotomidae**       | 14.36     | <b>L</b>            |       |
| Hormaphididae**     | 14.38     | Labiduridae**       | 05    |
| Huttoninidae**      | 22.55     | Labiidae**          | 05    |
| Hyblaeidae          | 18.76     | Lacciferidae**      | 14.39 |
| Hybosoridae**       | 19.96     | Lachnidae*          | 14.38 |
| Hybotidae**         | 22.26     | Lacosomidae         | 18.55 |
| Hydraenidae**       | 19.50     | Lacturidae**        | 18.47 |
| Hydrometridae       | 14.09     | Laemophloeidae**    | 19.30 |
| Hydrophilidae       | 19.50     | Lagoidea            | 18.45 |
| Hydroscaphidae      | 19.18     | Lagriidae           | 19.73 |
| Hygrobiidae         | 19.04     | Lamexyloniidae**    | 19.58 |
| Hylicidae**         | 14.31     | Lamingtoniidae**    | 19.33 |
| Hylophilidae**      | 19.83     | Lampyridae          | 19.55 |
| Hymenopodidae**     | 04.3      | Languriidae**       | 19.32 |
| Hymenoptera         | 21        | Largidae**          | 14.05 |
| Hyocephalidae**     | 14.02     | Lariidae            | 19.86 |
| Hyperoscelidae**    | 22.02     | Larridae            | 21.7  |
| Hyperoscelididae**  | 22.02     | Larvaevoridae**     | 22.57 |
| Hypertrophidae**    | 18.09     | Lasiocampidae       | 18.51 |
| Hypocephalidae**    | 19.88     | Lasiochilidae**     | 14.16 |
| Hypochthonellidae** | 14.32     | Lathiceridae**      | 04.5  |
| Hypocopridae**      | 19.33     | Lathrididae         | 19.38 |
| Hypodermatidae**    | 22.58     | Lathridiidae**      | 19.38 |
| Hyponomeutidae      | 18.11     | Latridiidae**       | 19.38 |
| Hypsidae            | 18.78     | Lauxaniidae**       | 22.36 |
| Hypsipterygidae**   | 14.15     | Lecaniidae**        | 14.39 |
|                     |           | Lecanodiaspididae** | 14.39 |
|                     |           | Lecithoceridae**    | 18.09 |
| <b>I</b>            |           | Ledridae**          | 14.31 |
| Ibaliidae           | 21.3      | Leioididae**        | 19.14 |
| Ichneumonidae       | 21.1      | Lemoniidae          | 18.61 |
| Idiostolidae**      | 14.04     | Lentulidae**        | 04.5  |
| Inbiomyiidae**      | 22.40     | Leotichiidae**      | 14.19 |
| Incurvariidae**     | 18.20     | Lepiceridae**       | 19.47 |
| Indarbelidae        | 18.44     | Lepidoptera         | 18    |
| Inopeplidae**       | 19.72     | Lepidothrichidae**  | 01    |
| Ipididae            | 19.92     | Lepidothrichidae**  | 01    |
| Ironomyiidae**      | 22.29     |                     |       |

|                    |       |                     |       |
|--------------------|-------|---------------------|-------|
| Lepismatidae**     | 01    | Malachiidae         | 19.56 |
| Leptidae           | 22.15 | Malacodermidae      | 19.55 |
| Leptinidae         | 19.16 | Malcidae**          | 14.04 |
| Leptoconopidae**   | 22.05 | Mallophaga**        | 10    |
| Leptodiridae**     | 19.14 | Manotidae**         | 22.07 |
| Leptofoenidae**    | 21.2  | Mantidae            | 04.3  |
| Leptogastridae**   | 22.23 | Mantodea**          | 04.3  |
| Leptopodidae**     | 14.19 | Mantoididae**       | 04.3  |
| Lestoniidae**      | 14.01 | Mantophasmatodea*** | 04.8  |
| Lestremiidae**     | 22.06 | Margarodidae**      | 14.39 |
| Leucospidae**      | 21.2  | Marginidae**        | 22.48 |
| Libytheidae**      | 18.61 | Masaridae**         | 21.6  |
| Lichadidae**       | 19.49 | Mastotermitidae     | 07.1  |
| Lichniidae**       | 19.96 | Mauroniscidae**     | 19.56 |
| Limacodidae        | 18.46 | Mecoptera           | 16    |
| Limexilidae**      | 19.58 | Medocostidae**      | 14.13 |
| Limnebiidae**      | 19.50 | Meenoplidae**       | 14.33 |
| Limnichidae**      | 19.49 | Megachilidae        | 21.8  |
| Limniidae**        | 19.49 | Megalodontesidae**  | 21.04 |
| Limoniidae**       | 22.01 | Megalodontidae**    | 21.04 |
| Limulodidae**      | 19.17 | Megalopodidae**     | 19.87 |
| Liodidae**         | 19.14 | Megaloptera**       | 15    |
| Liopteridae**      | 21.3  | Megalopygidae       | 18.45 |
| Liparidae          | 18.77 | Megalyridae**       | 21.1  |
| Lithocolletidae    | 18.14 | Megamerinidae**     | 22.42 |
| Lithosiidae        | 18.74 | Meganomiidae**      | 21.8  |
| Liviidae**         | 14.36 | Megarididae**       | 14.01 |
| Loboscelidiidae**  | 21.6  | Megaspilidae**      | 21.4  |
| Lonchaeidae**      | 22.45 | Meinertellidae**    | 01    |
| Lonchopteridae     | 22.28 | Melandryidae        | 19.77 |
| Lophocateridae**   | 19.26 | Melanthripidae**    | 13    |
| Lophocoronidae**   | 18.01 | Melasidae**         | 19.67 |
| Lophopidae**       | 14.32 | Melittidae**        | 21.8  |
| Lucanidae          | 19.95 | Melizoderidae**     | 14.30 |
| Lutrochidae**      | 19.49 | Mellinidae          | 21.7  |
| Lycaenidae         | 18.62 | Meloidae            | 19.81 |
| Lycidae            | 19.55 | Melolonthidae**     | 19.96 |
| Lycoriidae**       | 22.07 | Melusinidae**       | 22.09 |
| Lyctidae           | 19.63 | Melydridae          | 19.56 |
| Lyctocoridae**     | 14.16 | Melyridae           | 19.56 |
| Lygaeidae          | 14.04 | Membracidae         | 14.30 |
| Lygistorrhinidae** | 22.07 | Merophysidae**      | 19.38 |
| Lymantriidae       | 18.77 | Merothripidae**     | 13    |
| Lymexylidae**      | 19.58 | Meruidae**          | 19.06 |
| Lymexylonidae      | 19.58 | Merycidae**         | 19.40 |
| Lyonetiidae        | 18.19 | Mesembrinellidae**  | 22.57 |
| <b>M</b>           |       | Mesoveliidae**      | 14.08 |
| Maamingidae**      | 21.4  | Metallyticidae**    | 04.3  |
| Machaerotidae**    | 14.29 | Metarbelidae*       | 18.44 |
| Machilidae**       | 01    | Meziridae**         | 14.06 |
| Macrocephalidae    | 14.12 | Micrococcidae**     | 14.39 |
| Macroceridae**     | 22.07 | Microcoryphia**     | 01    |
| Macropogonidae**   | 19.49 | Microdontidae**     | 22.32 |
| Macrotermitidae**  | 07.3  | Micromalthidae      | 19.59 |
| Macroveliidae**    | 14.09 | Micropezidae        | 22.42 |
| Macroxyelidae**    | 21.03 | Microphoridae**     | 22.26 |
| Maindroniidae**    | 01    | Microphysidae**     | 14.13 |
|                    |       | Micropterigidae**   | 18.01 |

|                    |                  |                     |       |
|--------------------|------------------|---------------------|-------|
| Micropterygidae    | 18.01            | Nepticulidae        | 18.21 |
| Microsporidae**    | 19.19            | Neriidae**          | 22.42 |
| Milichiidae**      | 22.40            | Neurochaetidae**    | 22.48 |
| Mimallonidae**     | 18.55            | Neuroptera          | 15    |
| Mindaridae**       | 14.38            | Neuropterida**      | 15    |
| Mindidae**         | 22.40            | Nicoletiidae**      | 01    |
| Miridae            | 14.18            | Nicomiidae**        | 14.30 |
| Mirinidae**        | 18.56            | Nilionidae          | 19.74 |
| Miscogasteridae    | 21.2             | Ninidae**           | 14.04 |
| Mnesarchaeidae**   | 18.02            | Nitidulidae         | 19.29 |
| Mogoplistidae**    | 04.7             | Noctuidae           | 18.76 |
| Momphidae**        | 18.08            | Nogodinidae**       | 14.32 |
| Monocteniadae      | 18.68            | Nolidae**           | 18.76 |
| Monomachidae**     | 21.4             | Nomadidae           | 21.8  |
| Monomachiidae**    | 21.4             | Nosodendridae       | 19.46 |
| Monommatidae**     | 19.74            | Noteridae**         | 19.06 |
| Monommidae         | 19.74            | Nothybidae**        | 22.50 |
| Mononychidae       | 14.22            | Notiophygidae**     | 19.42 |
| Monotomidae        | 19.31            | Notodontidae        | 18.72 |
| Mordellidae        | 19.79            | Notomyzidae**       | 22.54 |
| Mormotomyiidae**   | 22.59            | Notonectidae        | 14.26 |
| Muscidae           | 22.56            | Nycteribidae        | 22.60 |
| Musidoridae        | 22.28            | Nycteribiidae**     | 22.60 |
| Mutilidae**        | 21.6             | Nymphalidae         | 18.60 |
| Mutillidae         | 21.6             | Nymphomyiidae**     | 22.11 |
| Mycetobiidae**     | 22.13            | Nyssonidae          | 21.7  |
| Mycetophagidae     | 19.39            |                     |       |
| Mycetophilidae     | 22.07            |                     |       |
| Mycteridae**       | 19.76            | <b>O</b>            |       |
| Mydidae**          | 22.21            | Ochodaeidae**       | 19.96 |
| Mydidae**          | 22.21            | Ochsenheimeriidae** | 18.18 |
| Myerslopiidae**    | 14.31            | Ochteridae**        | 14.21 |
| Mylabridae**       | 19.86            | Ochthiphilidae**    | 22.36 |
| Mymaridae          | 21.2             | Ocneriidae          | 18.77 |
| Mymarommatidae**   | 21.2             | Ocoidae**           | 22.24 |
| Myodochidae**      | 14.04            | Odinidae**          | 22.37 |
| Myrmecophilidae**  | 04.7             | Odiniidae**         | 22.37 |
| Myrmosidae         | 21.6             | Odonata             | 12    |
| Mystacinobiidae**  | 22.57            | Oecophoridae        | 18.09 |
| Mythicomyiidae**   | 22.25            | Oedemeridae         | 19.75 |
| Myxophaga**        | 19.18/.19, 19.47 | Oenosandridae**     | 18.72 |
| Nabidae            | 14.13            | Oestridae           | 22.58 |
|                    |                  | Olbiogastridae**    | 22.13 |
|                    |                  | Olethreutidae       | 18.27 |
| <b>N</b>           |                  | Omalisidae**        | 19.55 |
| Naeogaеidae**      | 14.08            | Omaniidae**         | 14.19 |
| Nannodastiidae**   | 22.52            | Omethidae**         | 19.55 |
| Nasutitermitidae** | 07.3             | Ommadidae**         | 19.10 |
| Naucoridae         | 14.23            | Ommatidae**         | 19.10 |
| Neididae**         | 14.03            | Ommexechidae**      | 04.5  |
| Nematocera         | 22.01/.13        | Omphralidae         | 22.22 |
| Nemeobiidae        | 18.61            | Opetiidae**         | 22.30 |
| Nemestrinidae      | 22.19            | Opomyzidae**        | 22.48 |
| Neminidae**        | 22.48            | Opostegidae**       | 18.21 |
| Nemonychidae**     | 19.90            | Oreoleptidae**      | 22.17 |
| Neopseustidae**    | 18.01            | Ormyridae**         | 21.2  |
| Neotheoridae**     | 18.02            | Orneodidae          | 18.26 |
| Neottiophilidae**  | 22.45            | Orphidae**          | 19.96 |
| Nepidae            | 14.25            | Orphnephilidae      | 22.12 |



|                       |        |                     |       |
|-----------------------|--------|---------------------|-------|
| Orphnidae**           | 19.96  | Perissomatidae**    | 22.02 |
| Orsodacnidae**        | 19.87  | Perissommatidae**   | 22.02 |
| Ortalidae             | 22.34  | Perophoridae        | 18.55 |
| Ortheziidae**         | 14.39  | Perothopidae**      | 19.67 |
| Orthoperidae**        | 19.20  | Petriidae           | 19.74 |
| Orthoptera s.l.       | 04     | Phacopteronidae**   | 14.36 |
| Orthoptera s.s.       | 04.5/7 | Phaenocephalidae    | 19.23 |
| Orussidae*            | 21.07  | Phaeomyiidae**      | 22.55 |
| Oryssidae             | 21.07  | Phalacridae**       | 19.35 |
| Oscinidae             | 22.40  | Phalaenoididae      | 18.75 |
| Othniidae             | 19.72  | Phalaeridae         | 19.35 |
| Otitidae**            | 22.34  | Phaloniidae         | 18.29 |
| Oxybelidae            | 21.7   | Phaneropteridae**   | 04.6  |
| Oxycarenidae**        | 14.04  | Phasmatidae**       | 04.4  |
| Oxychirotidae         | 18.34  | Phasmatodea**       | 04.4  |
| Oxycorynidae**        | 19.93  | Phasmida**          | 04.4  |
| Oxytenidae**          | 18.53  | Phasmidae           | 04.4  |
| <b>P</b>              |        |                     |       |
| Pachygronthidae**     | 14.04  | Phenacoleachiidae** | 14.39 |
| Pachyneuridae**       | 22.08  | Phenogodidae**      | 19.55 |
| Pachynomidae**        | 14.13  | Philanthidae        | 21.7  |
| Palaeosetidae         | 18.04  | Phlaeothripidae**   | 13    |
| Palaeophatidae**      | 18.20  | Phlebotomidae**     | 22.02 |
| Pallopteridae**       | 22.45  | Phloeidae**         | 14.01 |
| Pamphagidae**         | 04.5   | Phloeomyzidae**     | 14.38 |
| Pamphagodidae**       | 04.5   | Phloeostichidae**   | 19.27 |
| Pamphiliidae          | 21.04  | Phloiophilidae**    | 19.26 |
| Pantheidae**          | 18.76  | Phoenicococcidae**  | 14.39 |
| Pantopthalmidae       | 22.16  | Phoridae            | 22.29 |
| Panurgidae            | 21.8   | Phryneidae**        | 22.13 |
| Papilionidae          | 18.64  | Phthiraptera**      | 10    |
| Parandridae**         | 19.88  | Phycitidae          | 18.37 |
| Paraphrynovelliidae** | 14.09  | Phycodromidae       | 22.51 |
| Parnidae              | 19.49  | Phycosecidae**      | 19.57 |
| Passalidae            | 19.94  | Phylliidae**        | 04.4  |
| Passandridae**        | 19.30  | Phyllocnistidae**   | 18.14 |
| Pauliniidae**         | 04.5   | Phylloxeridae**     | 14.38 |
| Paussidae             | 19.06  | Phymatidae          | 14.12 |
| Paxylommatidae**      | 21.1   | Phytalmiidae**      | 22.35 |
| Pediciidae**          | 22.01  | Phytosecidae**      | 19.57 |
| Pedilidae**           | 19.84  | Pieridae            | 18.63 |
| Pelecinidae           | 21.4   | Piesmatidae**       | 14.04 |
| Pelecorhynchidae**    | 22.17  | Piophilidae         | 22.45 |
| Pelobiidae            | 19.04  | Pipunculidae        | 22.31 |
| Pelagonidae           | 14.21  | Plastoceridae**     | 19.55 |
| Peloriidae**          | 14.40  | Plataspidae**       | 14.01 |
| Peltidae**            | 19.26  | Platygasteridae     | 21.4  |
| Pemphigidae**         | 14.38  | Platygastridae**    | 21.4  |
| Pemphredonidae        | 21.7   | Platypediidae**     | 14.28 |
| Pentatomidae          | 14.01  | Platypezidae        | 22.30 |
| Penthetriidae**       | 22.08  | Platypodidae        | 19.92 |
| Peradeniidae**        | 21.4   | Platypyllidae       | 19.15 |
| Pergidae**            | 21.05  | Platyrrhinidae      | 19.90 |
| Perilampidae          | 21.2   | Platystomatidae**   | 22.34 |
| Perimylopidae**       | 19.69  | Plautillidae**      | 14.28 |
| Periscelididae**      | 22.48  | Pleciidae**         | 22.08 |
| Perisommatidae**      | 22.02  | Plecoptera          | 06    |
|                       |        | Pleidae**           | 14.20 |
|                       |        | Pleocomidae**       | 19.96 |

|                     |                                 |
|---------------------|---------------------------------|
| Plokiophilidae**    | 14.16                           |
| Plumariidae**       | 21.6                            |
| Plutellidae         | 18.15                           |
| Pneumoridae**       | 04.5                            |
| Podabrocephalidae** | 19.49                           |
| Podagrionidae**     | 21.2                            |
| Polleniidae**       | 22.57                           |
| Polyctenidae        | 14.17                           |
| Polyphaga**         | 19.11/.17, 19.20/.46, 19.48/.96 |
| Polyphagidae**      | 04.2                            |
| Polyplocidae        | 18.67                           |
| Pomaceridae**       | 22.20                           |
| Pompilidae          | 21.6                            |
| Potamocoridae**     | 14.23                           |
| Prionoceridae**     | 19.56                           |
| Proctotrupidae**    | 21.4                            |
| Proctotrypidae      | 21.4                            |
| Prodoxidae**        | 18.20                           |
| Propalticidae**     | 19.30                           |
| Prophalangopsidae** | 04.6                            |
| Proscopiidae**      | 04.5                            |
| Prosopidae          | 21.8                            |
| Prosorrhyncha**     | 14.01/.27, 14.40                |
| Prostomidae**       | 19.75                           |
| Proterhinidae**     | 19.93                           |
| Protocucujidae**    | 19.65                           |
| Protorhinidae       | 19.93                           |
| Prototheoridae      | 18.03                           |
| Protura             | 02                              |
| Psammocharidae      | 21.6                            |
| Pselaphidae         | 19.12                           |
| Psephenidae**       | 19.49                           |
| Pseudococcidae**    | 14.39                           |
| Pseudopomyzidae**   | 22.42                           |
| Psilidae            | 22.46                           |
| Psocoptera          | 09                              |
| Psychidae           | 18.41                           |
| Psychodidae         | 22.02                           |
| Psyllidae           | 14.36                           |
| Pterocallidae**     | 22.34                           |
| Pterogeniidae**     | 19.64                           |
| Pterolonchidae**    | 18.12                           |
| Pteromalidae        | 21.2                            |
| Pterophoridae       | 18.40                           |
| Pterothysanidae     | 18.57                           |
| Ptiliidae**         | 19.17                           |
| Ptilodactylidae**   | 19.49                           |
| Ptinidae            | 19.60                           |
| Ptychopteridae**    | 22.01                           |
| Putoidae**          | 14.39                           |
| Pygidicranidae**    | 05                              |
| Pyralidae           | 18.38                           |
| Pyraustidae         | 18.39                           |
| Pyrgacrididae**     | 04.5                            |
| Pyrgomorphidae**    | 04.5                            |
| Pyrgotidae**        | 22.34                           |
| Pyrochroidae        | 19.82                           |
| Pyrrhocoridae       | 14.05                           |
| Pythidae            | 19.76                           |

## R

|                     |           |
|---------------------|-----------|
| Rachiceridae**      | 22.15     |
| Rangomaramidae**    | 22.07     |
| Raphidioptera**     | 15        |
| Ratardidae          | 18.50     |
| Reduviidae          | 14.13     |
| Renyxidae**         | 21.4      |
| Rhagionidae**       | 22.15     |
| Rhaphidophoridae**  | 04.6      |
| Rhiniidae**         | 22.57     |
| Rhinomaceridae**    | 19.90     |
| Rhinophoridae**     | 22.57     |
| Rhinorhipidae**     | 19.49     |
| Rhinotermitidae     | 07.3      |
| Rhinotoridae**      | 22.54     |
| Rhipiceridae        | 19.54     |
| Rhipiphoridae       | 19.80     |
| Rhipipterygidae**   | 04.5      |
| Rhizophagidae**     | 19.31     |
| Rhogaphthalmidae**  | 19.55     |
| Rhopalidae**        | 14.02     |
| Rhopalocera         | 18.60/.65 |
| Rhopalomeridae      | 22.47     |
| Rhopalosomatidae**  | 21.6      |
| Rhopalosomidae      | 21.6      |
| Rhopalosommatidae** | 21.6      |
| Rhynchophthirina**  | 10        |
| Rhyparochromidae**  | 14.04     |
| Rhyphidae           | 22.13     |
| Rhysodidae          | 19.09     |
| Rhyssoaussidae      | 19.71     |
| Ricaniidae**        | 14.32     |
| Richardiidae**      | 22.45     |
| Riodinidae**        | 18.61     |
| Risidae**           | 22.39     |
| Roeslerstammiidae** | 18.14     |
| Romaleidae**        | 04.5      |
| Ropalomeridae**     | 22.47     |
| Roproniidae**       | 21.4      |
| Rotoitidae**        | 21.2      |
| Rutelidae**         | 19.96     |

## S

|                  |       |
|------------------|-------|
| Saldidae         | 14.19 |
| Salpingidae**    | 19.72 |
| Sandalidae**     | 19.54 |
| Sapromyzidae     | 22.36 |
| Sapygidae        | 21.6  |
| Sarcophagidae**  | 22.57 |
| Sarothriidae**   | 19.44 |
| Saturniidae      | 18.52 |
| Scaphidiidae     | 19.21 |
| Scarabaeidae     | 19.96 |
| Scathophagidae** | 22.41 |
| Scatomyzidae     | 22.41 |
| Scatophagidae**  | 22.41 |
| Scatopsidae**    | 22.02 |

|                       |           |                          |           |
|-----------------------|-----------|--------------------------|-----------|
| Scelionidae           | 21.4      | Stenopelmatidae**        | 04.6      |
| Scenopinidae          | 22.22     | Stenotrachelidae**       | 19.81     |
| Schizodactylidae**    | 04.6      | Stenotrachelidae**       | 19.81     |
| Schizophora           | 22.33/.62 | Stenotritidae**          | 21.8      |
| Schizopteridae**      | 14.15     | Stephanidae              | 21.1      |
| Schreckensteiniidae** | 18.14     | Sternorrhyncha**         | 14.36/.39 |
| Sciadoceridae**       | 22.29     | Stictococcidae**         | 14.39     |
| Sciaridae             | 22.07     | Stizidae                 | 21.7      |
| Sciomyzidae           | 22.55     | Stratiomyidae            | 22.14     |
| Sciophilidae**        | 22.07     | Streblidae               | 22.61     |
| Scirtidae**           | 19.53     | Strepsiptera             | 20        |
| Sclerogibbidae**      | 21.6      | Strongylophthalmyiidae** | 22.43     |
| Scolebythidae**       | 21.6      | Strongylophthalmyiidae** | 22.43     |
| Scoliidae             | 21.6      | Stylogasteridae**        | 22.33     |
| Scolytidae            | 19.92     | Stylopidae**             | 20        |
| Scraptiidae           | 19.78     | Sylvicolidae**           | 22.13     |
| Scutelleridae**       | 14.01     | Symmocidae**             | 18.09     |
| Scydmaenidae          | 19.13     | Synchroidae**            | 19.75     |
| Scythridae            | 18.12     | Synneuridae**            | 22.02     |
| Scythruidae**         | 18.12     | Synteliidae              | 19.24     |
| Sematuridae**         | 18.69     | Syntexidae**             | 21.02     |
| Sepsidae              | 22.44     | Syntomidae**             | 18.73     |
| Serritermitidae**     | 07.3      | Syntoniidae              | 18.73     |
| Serropalpidae**       | 19.77     | Syringogastridae**       | 22.50     |
| Sesiidae              | 18.06     | Syrphidae                | 22.32     |
| Sierolomorphidae**    | 21.6      | Systropodidae**          | 22.25     |
| Signiphoridae**       | 21.2      |                          |           |
| Sikhotaeliinidae**    | 19.10     | <b>T</b>                 |           |
| Silphidae             | 19.14     | Tabanidae                | 22.17     |
| Silvanidae**          | 19.30     | Tachardiidae**           | 14.39     |
| Simuliidae            | 22.09     | Tachinidae               | 22.57     |
| Siphonaptera          | 23        | Tachiniscidae**          | 22.34     |
| Siphonellopsidae**    | 22.40     | Taeniapteridae**         | 22.42     |
| Siricidae             | 21.02     | Tanaoceridae**           | 04.5      |
| Smicripidae**         | 19.29     | Tanaostigmatidae**       | 21.2      |
| Solvidae**            | 22.14     | Tanyderidae**            | 22.01     |
| Somabrachyidae**      | 18.45     | Tanypezidae              | 22.43     |
| Somatiidae**          | 22.46     | Telegeusidae**           | 19.55     |
| Spaniidae**           | 22.15     | Telephoridae             | 19.55     |
| Spercheidae**         | 19.50     | Temnochilidae**          | 19.26     |
| Sphaeriidae           | 19.19     | Tendipedidae**           | 22.05     |
| Sphaeritidae          | 19.25     | Tenebrionidae            | 19.69     |
| Sphaeroceridae        | 22.52     | Tenthredinidae           | 21.06     |
| Sphaerosomatidae**    | 19.42     | Tephritidae**            | 22.35     |
| Sphecidae             | 21.7      | Teragridae               | 18.44     |
| Sphegidae             | 21.7      | Teragriidae**            | 18.44     |
| Sphindidae            | 19.65     | Teratomyzidae**          | 22.48     |
| Sphingidae            | 18.71     | Terebrantia**            | 13        |
| Spondylaspididae**    | 14.36     | Termitaphididae**        | 14.06     |
| Spondylidae**         | 19.88     | Termitidae               | 07.3      |
| Spongiphoridae**      | 05        | Termitoxeniidae**        | 22.29     |
| Stackelbergomyiidae** | 22.57     | Termopsidae**            | 07.2      |
| Staphylinidae         | 19.11     | Tessaratomidae**         | 14.01     |
| Stelididae            | 21.8      | Tethinidae**             | 22.40     |
| Stemocryptidae**      | 14.15     | Tetracampidae**          | 21.2      |
| Stenocephalidae**     | 14.02     | Tetraphaleridae**        | 19.10     |
| Stenomatidae**        | 18.09     | Tetratomidae**           | 19.64     |
| Stenomicroidae**      | 22.48     | Tetrigidae**             | 04.5      |

|                      |       |                  |       |
|----------------------|-------|------------------|-------|
| Tettigadidae**       | 14.28 | Trogositidae     | 19.26 |
| Tettigarctidae**     | 14.28 | Trogossitidae**  | 19.26 |
| Tettigidae**         | 04.5  | Tropiduchidae**  | 14.32 |
| Tettigometridae**    | 14.32 | Trypaneidae      | 22.35 |
| Tettigoniidae        | 04.6  | Trypetidae       | 22.35 |
| Thaumaleidae         | 22.12 | Trypoxylonidae   | 21.7  |
| Thaumastellidae**    | 14.01 | Tubulifera**     | 13    |
| Thaumastocoridae**   | 14.13 | Tunisimyidae**   | 22.48 |
| Thaumastotheriidae** | 14.13 | Tylidae**        | 22.42 |
| Thaumetopoeidae      | 18.79 |                  |       |
| Thelaxidae**         | 14.38 | <b>U</b>         |       |
| Therevidae           | 22.24 | Ulidiidae**      | 22.34 |
| Thorictidae          | 19.36 | Ulodidae**       | 19.40 |
| Thripidae**          | 13    | Ulopidae**       | 14.31 |
| Throscidae           | 19.68 | Uraniidae        | 18.69 |
| Thyatiridae**        | 18.67 | Uroceridae       | 21.02 |
| Thymaridae           | 18.47 | Urodidae**       | 18.06 |
| Thynnidae            | 21.6  | Urodontidae**    | 19.90 |
| Thyreocoridae**      | 14.01 | Urolabidae**     | 14.01 |
| Thyreophoridae**     | 22.45 | Urostylidae**    | 14.01 |
| Thyretidae**         | 18.72 | Usiidae**        | 22.25 |
| Thyrididae           | 18.32 | Uzelothripidae** | 13    |
| Thysanidae**         | 21.2  |                  |       |
| Thysanoptera         | 13    | <b>V</b>         |       |
| Thysanura            | 01    | Vanhorniidae**   | 21.4  |
| Tibicinidae**        | 14.28 | Veliidae**       | 14.09 |
| Tineidae             | 18.19 | Velocipedidae**  | 14.13 |
| Tineodidae           | 18.33 | Vermileonidae**  | 22.15 |
| Tingidae             | 14.07 | Vespidae         | 21.6  |
| Tiphiidae**          | 21.6  | Vianaididae**    | 14.07 |
| Tipulidae            | 22.01 |                  |       |
| Tischeriidae**       | 18.20 | <b>X</b>         |       |
| Torridincolidae**    | 19.19 | Xenasteiidae**   | 22.48 |
| Tortricidae          | 18.28 | Xeniidae         | 20    |
| Torymidae            | 21.2  | Xiphydriidae     | 21.02 |
| Trachelostenidae**   | 19.69 | Xorididae**      | 21.1  |
| Trachypachidae**     | 19.02 | Xyelidae         | 21.03 |
| Trachypetidae**      | 21.1  | Xylocopidae      | 21.8  |
| Trepidariidae**      | 22.42 | Xylomyidae**     | 22.14 |
| Tretothoracidae**    | 19.72 | Xylophagidae**   | 22.15 |
| Triatominae**        | 14.13 | Xylophilidae     | 19.83 |
| Trichoceridae**      | 22.01 | Xyloryctidae     | 18.10 |
| Trichogrammatidae**  | 21.2  | Xyronotidae**    | 04.5  |
| Trichogrammidae      | 21.2  |                  |       |
| Trichoptera          | 17    | <b>Y</b>         |       |
| Trichopterygidae     | 19.17 | Yponomeutidae    | 18.11 |
| Trictenotomidae      | 19.85 | Ypsolophidae**   | 18.15 |
| Tridactylidae**      | 04.5  |                  |       |
| Trigonalidae         | 21.6  | <b>Z</b>         |       |
| Trigonalysidae**     | 21.6  | Zarudniolidae**  | 19.52 |
| Trigonopterygidae**  | 04.5  | Zopheridae**     | 19.74 |
| Triozidae**          | 14.36 | Zoraptera        | 09    |
| Tristiridae**        | 04.5  | Zorotypidae**    | 09    |
| Trixagidae**         | 19.68 | Zygaenidae       | 18.47 |
| Trixoscelididae**    | 22.54 | Zygentoma**      | 01    |
| Trogidae**           | 19.96 | Zygotera**       | 12    |

## **Appendix D**

### **Selection of trees of special interest to European and North American forestry**



| Latin   | English                           | German                                    |
|---|-----------------------------------|---|
| <b>CONIFERAE</b>  | <b>CONIFERS</b>                   | <b>KONIFEREN (Nadelbäume)</b>             |
| <i>Abies alba</i> Mill.   | European silver fir               | Weisstanne                                |
| <i>Abies balsamea</i> (L.) Mill.                                    | Balsam fir                        | Balsamtanne                               |
| <i>Cupressus sempervirens</i> L.                                    | Italian cypress                   | Gemeine Zypresse                          |
| <i>Larix decidua</i> Mill.  | European larch                    | Europäische Lärche                        |
| <i>Larix kaempferi</i> Carr.  | Japanese larch                    | Japanische Lärche                         |
| <i>Larix laricina</i> (Du Roi) K. Koch                              | Tamarack                          | Ostamerikanische Lärche                   |
| <i>Picea abies</i> Karst.   | Norway spruce                     | Gemeine Fichte, Rottanne                  |
| <i>Picea engelmannii</i> Parry ex Engelm.                           | Engelmann spruce                  | Engelmanns Fichte                         |
| <i>Picea omorika</i> Purk.  | Serbian spruce, Omorika spruce    | Serbische Fichte, Omorika Fichte          |
| <i>Pinus banksiana</i> Lamb.  | Jack pine                         | Banks Kiefer, Strauchkiefer               |
| <i>Pinus cembra</i> L.  | Arolla pine, Swiss stone pine     | Arve, Zirbelkiefer                        |
| <i>Pinus contorta</i> Dougl. ex Loud. var. <i>latifolia</i> Engelm. | Lodgepole pine                    | Lodgepole Kiefer, Murrays Kiefer          |
| <i>Pinus halepensis</i> Mill.                                       | Aleppo pine                       | Aleppo-Kiefer                             |
| <i>Pinus mugo</i> Turra   | Mountain pine                     | Bergkiefer, Bergföhre                     |
| <i>Pinus monticola</i> Dougl. ex D. Don                             | Western white pine                | Westliche Weymouths Kiefer                |
| <i>Pinus nigra</i> Arnold   | European black pine               | Schwarzkiefer, Schwarzföhre               |
| <i>Pinus ponderosa</i> P. Laws. ex C. Laws.                         | Ponderosa pine                    | Gelbkiefer                                |
| <i>Picea sitchensis</i> (Bong.) Carrière                            | Sitka spruce                      | Sitka-Fichte                              |
| <i>Pinus</i> spp.   | Southern pine                     | Kiefer, verschiedene Arten                |
| <i>Pinus strobus</i> L.   | Weymouth pine, Eastern white pine | Weymouths-Kiefer, Weymouths-Föhre, Strobe |
| <i>Pinus sylvestris</i> L.  | Scots pine                        | Gemeine Kiefer, Waldkiefer, Föhre         |
| <i>Pseudotsuga menziesii</i> Franco                                 | Douglas fir, Oregon Douglas fir   | Douglastanne, Douglasie                   |
| <i>Taxus baccata</i> L.   | Common yew, English yew           | Gemeine Eibe, Beereneibe, Roteibe         |
| <i>Thuja plicata</i> Donn ex D. Don                                 | Western redcedar                  | Rieselebensbaum                           |
| <i>Tsuga canadensis</i> (L.) Carrière                               | Eastern hemlock                   | Kanadische Hemlocktanne                   |
| <i>Tsuga heterophylla</i> (Raf.) Sarg.                              | Western hemlock                   | Westliche Hemlocktanne                    |

| Latin                                 | English                                     | German                               |
|---------------------------------------|---|--------------------------------------|
| <b>DICOTYLEDONEAE</b>                 | <b>DICOTYLEDONS<br/>(Broadleaved Trees)</b> | <b>DIKOTYLEDONEN<br/>(Laubbäume)</b> |
| <i>Acer campestre</i> L.              | Field maple                                 | Feldahorn                            |
| <i>Acer pseudoplatanus</i> L.         | Sycamore                                    | Bergahorn                            |
| <i>Acer saccharinum</i> L.            | Soft maple                                  | Silberahorn                          |
| <i>Acer saccharum</i> Marsh.          | Hard maple                                  | Zuckerahorn                          |
| <i>Alnus glutinosa</i> Gaertn.        | Common alder, Black alder                   | Schwarzerle, Roterle                 |
| <i>Alnus incana</i> Moench            | Grey alder, Speckled alder                  | Weisserle, Grauerle                  |
| <i>Alnus rubra</i> Marsh.             | Red alder                                   | Oregonerle                           |
| <i>Betula pendula</i> Roth            | Common silver birch                         | Hängebirke, Sandbirke                |
| <i>Carpinus betulus</i> L.            | Common hornbeam                             | Hagebuche, Hainbuche                 |
| <i>Castanea sativa</i> Mill.          | Spanish chestnut                            | Edelkastanie                         |
| <i>Fagus grandifolia</i> Ehrh.        | Beech                                       | Amerikanische Buche                  |
| <i>Fagus sylvatica</i> L.             | Common beech,<br>European beech             | Rotbuche, Buche, Gemeine<br>Buche    |
| <i>Fraxinus excelsior</i> L.          | Common ash                                  | Gemeine Esche                        |
| <i>Fraxinus ornus</i> L.              | Manna ash                                   | Mannaesche                           |
| <i>Juglans regia</i> L.               | Common walnut                               | Walnussbaum                          |
| <i>Ostrya carpinifolia</i> Scop.      | Hop hornbeam                                | Gemeine Hopfenbuche                  |
| <i>Populus alba</i> L.                | White poplar                                | Weisspappel                          |
| <i>Populus nigra</i> L.               | Black poplar                                | Schwarzpappel                        |
| <i>Populus</i> spp.                   | Cottonwood                                  | Zitterpappel, Aspe                   |
| <i>Populus tremula</i> L.             | Aspen                                       | Amerikanische Zitterpappel           |
| <i>Populus tremuloides</i> Michx.     | American aspen                              | Schwarzpappel-Hybride                |
| <i>Populus x euramericana</i> Guinier | Hybrid black poplar                         | Pappel, verschiedene Arten           |
| <i>Quercus cerris</i> L.              | Turkey oak                                  | Zerreiche                            |
| <i>Quercus ilex</i> L.                | Evergreen oak, Holm oak                     | Steineiche, Immergrüne Eiche         |
| <i>Quercus petraea</i> Liebl.         | Durmast oak, Sessile oak                    | Traubeneiche, Winterliche            |
| <i>Quercus robur</i> L.               | Common oak, Pedunculate oak                 | Stieleiche, Sommereiche              |
| <i>Quercus rubra</i> L.               | Red oak, Northern Red oak                   | Amerikanische Roteiche,<br>Roteiche  |
| <i>Robinia pseudoacacia</i> L.        | Locust, False acacia                        | Robinie, Falsche Akazie              |
| <i>Salix alba</i> L.                  | White willow                                | Silberweide, Weissweide              |
| <i>Sorbus aucuparia</i> L.            | Mountain ash, Rowan                         | Vogelbeerbaum                        |
| <i>Tilia cordata</i> Mill.            | Small-leaved lime                           | Winterlinde                          |
| <i>Ulmus glabra</i> Huds.             | Wych elm, Scots elm                         | Bergulme                             |
| <i>Ulmus minor</i> Mill.              | Smooth-leaved elm, Field elm                | Feldulme                             |





# Alphabetical indexes





# Topical subject index

## A

- Abiotic damage, assessment of 573.2
- Abiotic factors 11
  - manipulation of: as plant-ecological method 182.55
- Abnormal heartwood, as defect 852.16
- Abnormal structure, wood 811.2
- Abrasion resistance, wood 812.733
- Abridged editions (form tag) (048.6)*
- Abstracting journals (051.6)
- Abstracts (form tag) (048.3)*
- Abstracts, collected (form tag) (048.8)*
- Academic theses (form tag) (043.2)*
- Acarina 145.42
- Accessory silvicultural systems 221.5
- Accidents and their prevention 304
- Acclimatization:
  - nursery stock 232.325.5
  - plant, general 181.28
- Accountancy:
  - forest 67
  - forest products industries 796
  - marketing concerns 76
  - transport concerns 786
  - see also Book-keeping
- Accountancy (tag) --064*
- Acetates and acetic acid from dry distillation of wood 867.7
- Acetone from dry distillation of wood 867.3
- Acid precipitation 425.3
- Acidic components of chemical influences 425.11
- Acidification, nursery soil 232.322.3
- Acidity, soil 114.25
- Acoustic phenomena in atmosphere 111.96
- Acoustic properties, wood 812.12
- Acoustic tests (tag) Cf. --014.22 and --015.22*
- Acts (Legislation) (form tag) (094.5)*
- Adaptability:
  - animals 151
  - plants 181
- Address books; lists of addresses (form tag) (058.7)*
- Addresses; lectures (form tag) (042)*
- Adhesion, soil 114.14
- Adhesives:
  - for insecticides etc. 414.16
  - see also Glues
- Administration:
  - forest 68 (costs) 671; (national, federal, state etc. forests) 681; (private forests) 682
  - forest products industries 796.8
  - marketing concerns 768
  - transport concerns 786.8
- Administration (tag) --068*
- Administrative organization, public 932
- Adsorption in soil 114.243
- Adult wood 811.54
- Advance growth, regeneration from 231.1
- Advance planting 235.2
- Advertisements (form tag) (085)*
- Advice (form tag) (049.3)*
- Advisory services, forestry 945.1 --
  - (consultants) 945.13 (private) 945.13
  - State (public) 945.11
  - State (public) and private in collaboration 945.12
- Adzes 363.1
- Adzing:
  - as industrial operation 825.5
  - as logging operation 323.6
- Aeration, soil 114.13 -
  - as factor in root relations 181.342
- Aerial photography 587 -
  - aircraft, crew, flying conditions 586
  - in forest mensuration 587.5
  - in other forestry work 587.6
  - in vegetation and land-use surveys 587.7
  - interpretation of photos 587.2
  - photographic technique etc. 587.1
- Aerial survey, general 585
- Aerial visual reconnaissance (for survey purposes) 588
  - see also Fire detection
- Aerosols, generation of 414.23
- Afforestation 233
  - policy 913/914 (agricultural and pastoral land) 913;
  - (waste land) 914
- After-ripening, seed 181.524
- Age of planting stock 232.411.2
- Age of trees and other plants:
  - effect on behaviour 181.75
  - effect on coppicing 231.43
  - exceptional 181.71
- Age of trees, determination 55 -
  - groups and stands with annual rings 552
  - single trees with annual rings 551
  - spp. with irregular or no rings 553
- Agreements (form tag) (088.4)*
- Agreements, international:
  - forestry 973 (private) 973.2; (State) 973.1
  - trade 742.1 (private) 742.12; (State) 742.11
- Agricultural products of the forest 892.2
- Agricultural uses of wood:
  - in structures 833.4
  - miscellaneous 831.5
- Agriculture:
  - alternating with forestry 261
  - combinations with forestry, general 26
  - relation of forests and forestry to 908.1 [see *preferably Land use*]
- Agroforestry 26
- Air: currents see Wind
  - pressure 111.4
  - temperature 111.24
- Air cushion vehicles 375.9
- Air drying, wood 847.1
- Air seeding 232.338
- Air transport of forest products 376
- Air transport of men, supplies etc.: in forestry 687.3
- Air transport of men, supplies etc. (tag) --067.3*
- Aircraft:
  - for survey work 586
  - wood in 838.7

- Airscrews, wood in 838.75
- Alcohol:  
ethyl, from wood hydrolysates 863.4  
methyl, from dry distillation of wood 867.6
- Algae 172.6 -  
blue-green 172.3
- Alimentary system of animals 134.3
- Alkali soils 114.445.2  
degraded 114.445.3
- Allelopathy:  
chemical constituents harmful to the plant 160.26  
in plant competition 181.41
- Allowable cut 624.1
- Alluvium 114.447
- Almanacs (form tag) (059)*
- Alternate clear-strip system 221.222
- Alternate forestry and agriculture 261
- Alternation in vegetation:  
spatial (alternes) 182.24  
temporal (e.g. of dominants) 182.25
- Alternes 182.24
- Altitude 113.2
- Amelioration of forest sites 237 [engineering aspects  
see 385; economic aspects see 651.71]
- Amenity see Rural amenity
- Amphibia 147.6
- Anabolic processes:  
animal 131.2/.3  
plant 161.3
- Analysis, chemical:  
animal 130  
atmosphere 111.104  
bark and wood 813  
plant (as index to soil fertility) 114.521.5; (bark)  
160.202; (foliage) 160.201; (general) 160.2; (roots)  
160.203; (wood) 160.204  
soil 114.2
- Analysis, genetical:  
animal 135  
plant 165.41
- Analysis, mechanical (soil) 114.15
- Analysis (tag) Cf. --014 and --015*
- Anatomy:  
animal 134  
plant (general) see Histology, Morphology  
wood and bark 811
- Angiospermae 175
- Angle count method 521.62
- Animal husbandry, relations of forests and forestry to  
908.1  
[see preferably Land use]
- Animal husbandry (tag) --023*
- Animal products of the forest 893 -  
husbandry of crops grown for 288
- Animal quarters (stables etc.) 382.8
- Animal transport of forest products 374.2
- Animals attacking trees: injuries and protection 45  
see also Insect attack etc.
- Animals attacking wood 845 -  
defects due to 852.5 [see preferably subheads of 845]  
prevention and control [cf. also Preservation] 845.5;  
(biological) 845.52; (by fumigation) 845.53; (by  
heat treatment) 845.54; (chemical) 845.51; (during  
storage and shipment) 845.57; (in buildings) 845.58  
see also Insect attack etc.
- Animals:  
classification 14  
draught (costs) 663.22; (work studies) 353  
harmful 136.5  
population cycles and fluctuations 153; (control) 153.4;  
(irregular) 153.2; (other) 153.3; (regular) 153.1  
protected 907.13  
reaction of plants to 181.42  
useful 136.1  
see also Anatomy, Ecology, Game, Protection etc.
- Annual reports (form tag) (047.1)*
- Annuals; yearbooks (form tag) (058)*
- Anteaters 149.31
- Antelopes 149.73
- Anthologies (form tag) (082.2)*
- Antlers 156.42
- Apes 149.8
- Apparatus (tag) Cf. --017 and --087 and note at --017*
- Arachnida 145.4
- Arbor days 945.27
- Arboreta 271
- Arboriculture 27
- Archegoniatae 173.1
- Arches, logging 377.41
- Architraves 833.155
- Archives 945.16
- Area, basal see Basal area
- Area, measures of 514 -  
British and American 514.2  
metric 514.1  
other 514.9
- Area of stem and/or branches 536
- Armadillos 149.31
- Art, the forest in 907.6
- Arthropoda 145.2
- Articles (form tags):*  
*in newspapers (046)*  
*in periodicals (045)*
- Articulata 145
- Artificial regeneration 232 -  
auxiliary measures for 232.2
- Artificial stands 228.7
- Asexual (vegetative) reproduction, plant 181.51  
plant breeding by 165.44
- Ash:  
constituents (plant) 160.21; (wood and bark) 813.3  
volcanic, forest injuries 426.2  
wood, as forest product 892.3
- Asiphonogamous embryophyta 173.1
- Aspect 113.3
- Asses 149.72
- Assessment of:  
abiotic damage 573.2  
biotic damage 573.1  
crown condition 572.1  
damage to stem and crown 573  
defoliation 572.2  
discolouration 572.3  
mortality 572.4
- Assimilation 161.3  
autotrophic plants 161.31; (carbon) 161.32; (other  
substances) 161.33  
heterotrophic plants 161.37

Associations:  
 business, see Economics, Marketing  
 forest employers' 967  
 forest workers' 967  
 forestry and forest products 946.1  
*Associations (tag) --094.6*  
 Associations, plant: status as units of vegetation etc.  
 182.3  
 [see also Vegetation types]  
 Assortment volume tables 525.1  
 Assortments of wood in the rough 325 -  
 determination of volume by 525.1  
 logging costs of different 664  
*Atlases (form tag) (084.4)*  
 Atmosphere 111 -  
 acoustic phenomena in 111.96  
 circulation (general) 111.13  
 composition 111.104  
 cosmic influences 111.902  
 disturbances 111.15  
 electrical phenomena in 111.94  
 formations 111.15  
 humidity 111.71  
 influences damaging trees 42  
 mechanics 111.11  
 of soil 114.13  
 optical phenomena in 111.93  
 plant behaviour in relation to 181.2  
 pressure 111.4  
 solid particles in: damage to trees 426.2  
 structure (general) 111.105  
 temperature 111.24  
 thermodynamics 111.11  
 upper (climate of) 111.87; (condensation and deposits in) 111.747  
*Attestations (form tag) (088)*  
 Attractants for forest pests 414.11  
 Autecology:  
 animal 151  
 plant 181  
 Autotrophic plants, assimilation in 161.31  
 Auxiliary species 235.4  
 Avalanche:  
 classification 116.122.1  
 control 116.123.1 (by vegetation) 116.123.12; (engineering works) 116.123.13; temporary 116.123.2  
 dynamics 116.122.2  
 evacuation 116.123.24  
 forces 116.122.2  
 formation 116.122.1  
 protection forest 116.123.12  
 release 116.122.1  
 release by explosives 116.123.22  
 risk management 116.123  
 road closures 116.123.23  
 safety measures 116.123  
 track 116.122.2  
 types 116.122.1  
 warning 116.123.21  
 Avalanches: 116.122 -  
 engineering works against 384.1  
 forest injuries and protection 423.5  
 Aves 148.2  
 Awards, forestry 945.26  
 Axes 363.1

## B

Back-firing 432.334  
 Bacteria 172.3 -  
 soil (fermenting) 114.61; (other) 114.66  
 Bacterial symbiosis (nodules etc.) 181.351  
 Bacterial tree diseases and protection against them 443  
 Baits, poison 414.11  
 Balance of increment and depletion:  
 accountancy in forest enterprises 672.2  
 regional, national etc. 905.2  
 Balancing see under Economics, Marketing  
 Balconies, wood in 833.17  
 Ball planting 232.429  
 Bamboo:  
 as forest product 892.83  
 growing and collection 287  
 Band saws and sawing 822.34  
 Bank erosion 116.3  
 Bans, international trade 742.4  
 Barges:  
 loading and unloading of 378.8  
 transport by 378.8  
 Bark-blazing tools 365.2  
 Bark crops, growing and collection 282 -  
 cork 282.2  
 for fibre products 282.4  
 for medicinal products 282.3  
 tanbark 282.1  
 Bark:  
 chemistry 813  
 degree of utilization and waste 331.4  
 dilatation 811.73  
 injuries 416.4  
 structure 811.7  
 see also Phloem  
 Bark measurements 523 -  
 bark % 523.3  
 form, variation in thickness along stem 523.2  
 thickness 523.1  
 volume 523.3  
 Bark pockets 852.13  
 Bark products, utilization 892.4 -  
 cork 892.42  
 fibres 892.43  
 medicinal 892.52  
 tanstuffs 892.41  
 Barking:  
 advance measures to facilitate 322.3  
 as industrial operation, including machines 821  
 as logging operation 323.5; (barking irons, spuds) 361.2; (draw-knives) 361.3; (machines) 361.7; (maintenance of tools and machines) 361.8; (theory of) 361.0; (tools and machines, general) 361.0; (tools for barking during sap-flow period) 361.4  
 chemical measures 322.3  
 Barrows, logging 377.43  
 Basal area 521.6 -  
 single stems 521.61  
 stands (mean basal area) 521.62  
 Basal-area increment 561.25  
 Base exchange, soil 114.234  
 Baskets:  
 raising plants in 232.329.6  
 use of wood in 834.5

Bathroom fittings, wood in 833.158  
 Bats (Chiroptera) 149.4  
 Bats, sticks and racquets 835  
 Battery separators, wooden 835  
 Beams 833.121 -  
     composite-wood 832.286  
 Bears 149.74  
 Beating up (beeting) 236.5  
 Beavers 149.32  
 Behaviour, reproductive:  
     animal 151.5  
     plant 181.5  
 Behaviour, social see Sociology  
 Bending strength, wood 812.71 -  
     impact 812.712  
     static 812.711  
 Bending, wood 827.1  
 Benefices, forests belonging to 922.3  
 Berries (from undergrowth) 289.5  
*Bibliographical lists (form tag) (048.1)*  
*Bibliographies (form tag) (01)*  
 Billhooks 363.2  
*Bills (Legislation) (form tag) (094.5)*  
 Biochemistry:  
     animal 130  
     plant 160  
 Bioclimatology 111.86  
 Bioconversion for pulp 861.16  
 Biodiversity 121  
 Biographies 902.1  
*Biography (form tag) (092)*  
 Bioindicators 114.521.6  
 Biological control: forest pests 411 -  
     amphibia and reptiles 411.13  
     bacteria and fungi 411.16  
     birds 411.14  
     insects and other arthropods 411.12  
     lower invertebrates 411.11  
     mammals 411.15  
     natural enemies 411.1  
     virus diseases 411.18  
     timber pests 845.52  
*Biological tests (tags) cf. --014.4 and --015.4*  
 Biology:  
     general 12  
     molecular 165.2  
     soil 114.6  
 Biomass:  
     as fuel [*Cf. 839.8 and 839.31*]  
     measurement (dry matter production) 537  
     special crops 238  
     whole tree harvesting 331.1  
 Biometeorology 111.86  
 Biotechnology 165.8  
 Biotic damage, assessment of 573.1  
 Biotic factors:  
     manipulation of: as method in plant ecology 182.54  
     reaction of plants to 181.4  
 Bird sanctuaries 907.13  
 Birds 148.2  
     damage by and protection against 452; (in direct  
     sowings) 232.336; (in the nursery) 232.327.3  
*Blank forms (form tag) (083.2)*  
 Blanks, filling of ("beating up") 236.5  
 Bleaching:  
     pulp 861.17  
     wood 829.11  
 Blemishes, wood 852.15  
 "Blendersaumschlag" 221.224  
 Blockboard 832.283  
 Blood and its circulation, physiology of 131.1 [*Cf. also*  
     Circulatory system]  
 Blue-green algae 172.3  
 Board-foot measure:  
     actual application to scaling 526.6  
     by log rules, as system of measurement 516.26  
 Boats:  
     loading and unloading of 378.8  
     masts 831.48  
     transport by 378.8  
     use of wood in 838.6  
 Bobbins 835  
 Bolt-bearing strength, wood 812.792  
 Bolted joints 824.3  
 Bonsai 278  
 Book-keeping in:  
     forest enterprises 673; (logging operations) 673.2;  
     (whole enterprise) 673.1  
     forest products industries 796.3  
     marketing concerns 763  
     transport concerns 786.3  
*Book-keeping (tag) --064*  
*Books, reference (form tags):*  
     *alphabetically arranged (03); comprehensive (031); of*  
     *limited scope (033)*  
     *systematically arranged (02); comprehensive (021); of*  
     *limited scope (023)*  
 Booms 378.7  
 Boot and shoe trade, uses of wood in 835  
 Border of forest 267  
 Border trees and shrubs as a protective surround 228.9  
 Borers in wood:  
     marine 845.1  
     terrestrial 845.2  
 Boring 823.4  
 Botany: 16/18  
     ecological 18  
     economic 166  
     general 16  
     systematic 17  
 Bow-saws see Saws and sawing  
 Boxes, wooden 834.4  
 Branches:  
     mensurational form 524.18  
     morphology 164.4  
     ornamental, as forest product 892.51  
     persistence or shedding of 181.63  
     surface area of 536  
 Branchiata 145.3  
 Branch wood:  
     degree of utilization and waste 331.3  
     structure and properties 815.31  
     see also Slash  
 Brushing 245.11  
     costs and profitability 651.73  
 Break(ing) down saws 822.45  
 Breeding, animal 135  
 Breeding for resistance 165.46

Breeding, plant 165.3 -  
 basic methods 165.4; (by asexual reproduction)  
 165.44; (by clones) 165.441; (by selfing and crossing)  
 165.41; (by tissue culture) 165.442; (by using mutations)  
 165.43  
 practical trials of products (trees and shrubs) 232.13  
*see also* Seed  
 Breeding strategies 165.46  
 Bridges:  
 forest engineering 383.8  
 wood in 833.5  
 Briquettes and briquetting 839.813  
 Broadcasting 945.23  
*Brochures (form tag) (041)*  
 Broom (Cytisus) as forest product 892.81  
 Brooms and broom handles 835  
 Brown earths 114.441.3  
 Brown semi-desert soils 114.442.3  
 Brushwood cutters (chippers) 363.7  
 Bryology; Bryophyta 173.2  
 Bucking *see* Cross-cutting  
 Bud pruning 245.14  
 Budding (bud-grafting) 232.328.5  
 Budgetting *see* Economics, Marketing  
 Buds:  
 injuries to 416.1  
 morphology 164.4; (flower buds) 164.6  
 Buffaloes, transport by 374.4  
 Buffer capacity, soil 114.231  
 Builders' rough planks 833.11  
*Buildings etc. (tag) --066*  
 Buildings, forest:  
 construction 382  
 materials for 381.2  
 planning and organization 686.2  
*see also* Economics  
 Buildings, use of wood in 833 -  
 agricultural and horticultural 833.4  
 components and fittings, general 833.1  
 factories and work places 833.3  
 prevention and control of fungi 844.48  
 prevention and control of insects 845.58  
 public, commercial and residential 833.2  
 Bunch planting 232.429  
 Bundling of logs for water transport 378.2  
 Buoyancy, wood 812.35  
 Burning (uses of fire) 436 -  
 to control fungus diseases 436:443  
 to prepare for artificial regeneration 232.213  
 to prepare for natural regeneration 231.322  
 to reduce fire danger 436:432.16  
 Burnt areas:  
 erosion control 116.65  
 revegetation etc. 434  
 Burying of planting stock 232.412.3  
 Business and businesses *see* Economics, Marketing  
 Business problems of logging, general 66  
 Butt injuries 416.3  
 Buttresses:  
 diameter measurement in presence of 521.26  
 removal of 322.5  
*By-products (tag) --088.6*

## C

Cabinet making 836.1  
 Cable logging 375.1 -  
 ground line and winch 375.11  
 overhead lines 375.12  
 simple hand-controlled gravity cable (*Abseilen*) 375.13  
 Cables, logging 377.21  
 Calcareous soils 114.465  
 Calcium and compounds in soil 114.267  
 Calcium fertilizers (nursery) 232.322.417  
*Calculations (tag) --015.5*  
*Calendars (form tag) (059)*  
 Calipers:  
 for logging work (combined with measuring sticks)  
 365.8; (simple calipers) 365.5  
 for mensurational work proper 521.1  
 Calorific value, wood 812.144  
 Cambium 168 -  
 injuries to 416.4  
 of trees 811.13  
 Camels 149.73  
 transport by 374.9  
 Camping *see* Recreation  
 Camps, logging 382.3  
 costs of 663.27  
 Canals:  
 erosion along 116.5  
 tree-growing in lines or strips along 265; (policy regarding)  
 915  
 Canes:  
 as forest product 892.83  
 growing and collection 287  
 Canker 416.4  
 Canopy:  
 interception of precipitation 116.11  
 manipulation for natural regeneration 231.31  
 opening of (as tending measure) 243  
 overhead cover and density 228.11; (measurement) 533  
*see also* Crown, Dominance  
 Cant hooks 364.1  
 Capital *see* Economics, Costs  
 Carbohydrates, wood 813.12  
 Carbon and carbon compounds, essential to plant 160.241  
 Carbon assimilation by autotrophic plants 161.32  
 Cardboard:  
 manufacture 861.2  
 types of 861.28  
 Career services 961.1  
 Careers in forestry, information 945.36  
 Carnivora 149.74  
 Carpenters' joints 824.6  
 Carpentry, general 828  
 Cartels *see* Economics, Marketing  
 Carts, use of wood in 838.1  
 Carving 836.3  
 Case-hardening of wood 852.33  
*see also* Seasoning defects  
 Catabolic processes, plant 161.2  
*Catalogues (form tag):*  
*commercial; trade (085)*  
*other (083.8)*  
 Catenas, soil 114.411  
 Cats 149.74  
 Ceilings, use of wood in 833.14

- Cell phones 387.1
- Cell wall (plant):
  - constituents (general) 160.22; (woody tissues) 813.1
  - structure (general) 168; (woody tissues) 811.12
- Cells, plant:
  - general 168
  - physiology 161.7
  - wood and bark 811.11 - (contents) 811.115; (dimensions and shape) 811.112
- Cellulose:
  - as wood constituent 813.13
  - derivatives (cellulose esters etc.) 861.5
  - fodder 861.6
  - textiles (rayon; cellulose wool etc.) 861.4
  - see also Pulping and pulp
- Certificates (form tag) (079.2)*
- Certification:
  - financing 676.4
  - forest 633
  - forest, related to marketing 742.41
  - planting stock 232.411.1
  - seed 232.314
- Cetacea 149.5
- Change of locality, animal 151.21
- Change of silvicultural system or species 226
  - planning of 624.3
- Charcoal:
  - for industrial producer-gas 867.32
  - for producer-gas vehicles 867.31
  - manufacture see Distillation
  - properties and uses 867.5
- Chartering 785.3
- Checked plantations, treatment of 237 -
  - draining 237.2
  - fertilizing etc. 237.4
  - interplanting 237.5 - (with nurses) 237.52; (with substitute spp.) 237.51
  - irrigation 237.6
  - mounding and mulching 237.3
  - ploughing or soil working 237.1
  - turf lifting 237.9
- Checklists, regional, of vascular plants 174 [with geographical number and form number (083.8)]
- Checks in wood:
  - natural 852.18
  - seasoning 852.31
- Chemical barking, measures 322.3
- Chemical constituents, plant 160.2 -
  - ash 160.21
  - essential 160.24
  - harmful to plant 160.26
  - inorganic 160.21
  - mineral 160.21
  - mutual influence of 160.28
  - non-essential 160.25
  - organic 160.22
  - stimulants 160.27
  - toxic to plant 160.26
  - see also Chemistry, wood
- Chemical control of forest injuries 414 -
  - application, methods, equipment 414.2 - (dusting) 414.21; (fumigation, generation of aerosols and smokes) 414.23; (plant injection) 414.26; (soil injection) 414.27; (spraying) 414.22; (surface coating, painting etc.) 414.24
  - preparations 414.1 - (attractants) 414.11; (auxiliary materials, diluents, adhesives etc.) 414.16; (growth regulators) 414.13; (other poisonous preparations) 414.12; (poison baits) 414.11; (repellents) 414.14
  - side effects of chemical treatments, toxicity 414.4
- Chemical effects of heat on wood 813.4
- Chemical influences, acidic components 425.11
- Chemical injuries: protection against (tag) --042*
- Chemical pulping and pulp 861.12/.16
- Chemical seasoning 847.6
- Chemical soil relations of plants 181.34
- Chemical tests (tags) cf. --014.3 and --015.3*
- Chemical utilization of wood 86
- Chemicals:
  - effect on wood 813.6
  - in atmosphere, tree injuries and protection 425
  - in soil, tree injuries and protection 424.5
  - treatments to improve resistance of wood to 842.5
- Chemistry:
  - animal 130
  - atmosphere 111.104
  - plant 160
  - soil 114.2 - (inorganic) 114.26; (organic) 114.27
  - wood 813
  - see also *individual constituents*, e.g. Cellulose, Lignin
- Chernozems 114.442.1 -
  - degraded 114.441.5
  - tropical 114.442.7
- Chestnut earths 114.442.2
- Chimaeras, plant 165.73
- Chip mouldings, resin-bonded 862.2
- Chipboards 862.2
- Chipping, energy wood (in the forest) 333.3
- Chipping in the forest 333.3
- Chipping of wood, machines and tools:
  - forest 363.7
  - industrial 825.71
- Chips 839.3
  - as raw material for pulping, chipboard etc. 861.0
  - for energy 839.31
  - for industry 839.32
- Chiroptera 149.4
- Chiselling 823.2
- Chlorosis 424.7
- Choice of species:
  - economic aspects 651.71
  - for plantations 232.1
  - general 228.0
  - management aspects 614
- Christmas trees:
  - as forest product 892.51
  - growing and harvesting 281
- Chromosomes:
  - animal 135
  - plant 165.4 especially 165.42
- Chronicles (form tag) (093.3)*
- Churches:
  - forests belonging to 922.3
  - woodwork for 836.2
- Chutes 373.2
- Circular saws and sawing 822.33
- Circulars (form tags):*
  - commercial; industrial (085)*
  - other (044)*
- Circulatory system, animal 134.1



- Classification (tag) --014, [which see for possible subdivisions]*
- Clay soils 114.463
- Cleanings 241
- Clear felling:
  - as basic type of felling 221.01
  - as system 221.1
- Clear-strip system:
  - alternate 221.222
  - progressive 221.221
- Clearing of felling areas 332 -
  - for uses other than forestry 332.4
  - see also Re-logging, Slash etc.
- Clearing of sites:
  - for artificial regeneration 232.211
  - for natural regeneration 231.32
- Cleavage, resistance of wood to 812.75
- Cleaving of wood:
  - as industrial operation, including machines 825.1
  - as logging operation 323.6; (hammers) 363.3; (machines) 363.5; (maintenance of cleavers) 363.8; (wedges) 363.4
- Climate and microclimate; meteorology; the atmosphere 111
- Climate; climatology 111.8 -
  - influence of environment 111.88
  - influence of latitude 111.81
  - influence on soil development 114.31
  - of particular places and regions 111.82
  - of upper atmosphere 111.87
  - solar 111.81
  - see also Bioclimatology, Microclimate
- Climatic changes 111.83
- Climatic requirements:
  - animal 151.1
  - plant 181.2
- Climatic types 111.85
- Climatic zones 111.81
- Climaxes (plant ecology) 182.22
- Climbers: 182.43
  - cutting 244
  - damage by and protection against 442.3
- Climbing equipment 369
- Clonal forestry 232.411.4
- Clones:
  - breeding 165.44 - (plant-basic methods) 165.441
  - reproduction 181.51
- Clouds 111.76
- Clubs, workers' 967
- Co-operation in advisory services, State (public) and private 945.12
- Co-operation, international, forestry and forest industries 97
- Co-operation of forest owners 944
- Co-operation (tags):*
  - international --097*
  - other --094.4*
- Coast erosion and protection:
  - general 116.81
  - sand fixation 116.82
- Coatings (paints etc.) for chemical control of forest injuries 414.24
- Coelenterates 143
- Coffins 836.8
- Cogeneration 831.1
- Cogwheels, wooden 835
- Cohesion, soil 114.14
- Cold storage 232.412.7
- Collaboration see Co-operation
- Collapse, wood 852.35
  - see also Seasoning defects
- Collected works (form tag):*
  - of different authors (082)*
  - of individual authors (081)*
- Collection, seed 232.312.1
- Collection (tags):*
  - natural produce --03*
  - specimens (samples) --013.1*
- Collective works of different authors (form tag) (082)*
- Colloidal properties, soil 114.24
- Colloidal state of soil 114.242
- Colonization schemes, forest 912
- Colour of wood 812.111
- Colouring of wood 829.12
- Columns, wood 833.122
- Combinations of forestry with agriculture and pastoral husbandry 26
- Combinations of wood-processing mills 832.8
- Combined cutting actions in wood processing 823.7
- Combustion of wood:
  - chemistry 813.4
  - physics 812.143
  - see also Calorific value, Stoves
- Commercial buildings, uses of wood in 833.2
- Comminution of wood, mechanical 825.7
  - see also Chipping, Grinding etc.
- Common ownership, private forests in 924
- Common ownership (tag) --092.4*
- Communal ("community") forests 922.2
- Communications see Roads, Telecommunications etc.
- Communities 121 -
  - animal 152
  - forest 188
  - plant 182; (artificial) 182.8
  - see also Succession, Vegetation etc.
- Compaction, soil 114.11
- Companies, mining, industrial etc., forests belonging to 923.2
- Company magazines (form tag) (085.3)*
- Compartments 615
- Compasses, tree 365.7
- Compensation for damage, forest valuation for 652.54
- Competition, plant 181.41
- Competitions, forestry 945.26
- Competitive materials, replacement of wood by 88
- Competitive products (tag) --088.4*
- Composite-wood assemblies 832.286
  - laminated veneer lumber (LVL) 832.287
  - parallel strand lumber (PSL) 832.288
- Compost, use of:
  - at time of planting out 232.425.2
  - for site amelioration 237.4
  - in direct sowings 232.332
  - in nurseries 232.322.44
- Composting 232.322.44
- Compounds, carbon, essential to plant 160.241
- Compression:
  - failures in wood 852.16
  - resistance of wood to 812.72
- Compression wood see Reaction wood

- Computer modelling 945.5
- Computer networks:
  - for forest engineering operations 387.2;
  - planning and organizing 685.4
- Computers in forestry 945.5
- Concrete, wood/cement 862.4
- Concretions, soil:
  - below surface 114.362
  - surface 114.361
- Condensation (in atmosphere) 111.74 -
  - at earth's surface 111.744; (liquid) 111.744.1; (solid) 111.744.2
  - on objects in upper atmosphere 111.747
- Conductivity, wood:
  - electrical 812.151
  - thermal 812.141
- Cones:
  - injuries to 416.2
  - morphology 164.7
- Conferences (congresses), forestry and forest products:
  - international 971
  - other 946.2
- Congeaed snowflakes 111.78
  - forest injuries 423.6
- Coniferae 174.7
- Connectors, timber 824.5
- Conservation:
  - financing 676.4
  - general 907
- Conservation genetics 165.55
- Conservation of landscape, 907.1
  - costs 656
- Consistence, soil 114.14
- Consolidation of scattered holdings 928
- Constancy (plant ecology) 182.51
- Construction materials (forest engineering) 381.2
- Consultants 945.13
- Consultative planning 624.6
- Consumption of forest products see Marketing
- Containers, raising plants in 232.329.6
- Continuation courses 945.34
- Continuous forest ("Dauerwald") 221.6
- Contouring (erosion control) 116.62
- Contract systems 644.6
- Contraction, thermal, of wood 812.142
- Contracts (form tag) (088.4)*
- Control and inventory of fellings 327
- Control of forest injuries see Biological and natural control, Chemical control, Physical and mechanical control, Silvicultural control
- Control of working plans 625
- Control, State see Public supervision and regulation
- Contrôle, méthode du:
  - as mensurational method 562.42
  - as method of yield regulation 624.1
- Convents, forests belonging to 922.3
- Conversion factors and tables (form tag) (083.5)*
- Conversion, silvicultural (by system or spp.) 226 -
  - planning (working plans) 624.3
- Conversion, weights and measures 51
- Conversion, wood:
  - industrial 8; (chemical) 86; industrial (mechanical) 82/83
  - primary (performance studies) 35; (phases of work) 32/33; (tools, machines, etc.) 36
- Cooperage 834.3
  - loose (slack) 834.32
  - tight 834.31
  - vats and tanks 834.33
- Coppice, natural regeneration from 231.4 -
  - effects of (age or size of trees cut) 231.43; (height of cutting) 231.42; (season of cutting) 231.41; (trimming stumps) 231.44
- Coppice systems: 222 -
  - selection 222.22
  - shelterwood 222.23
  - simple 222.21
  - with field crops 261.2
  - with standards 222.1
- Cork:
  - as product 892.42
  - growing and harvesting 282.2
- "Corks," wooden 835
- Correspondence (form tag) (044)*
- "Corrosiveness" of wood 813.5
- Cosmic influences 111.902 -
  - forest injuries and protection 426
- Cost benefit analysis 651
- Costs and costing in marketing concerns 761
- Costs and costing in the forest products industries 796.1
- Costs and costing in transport concerns 786.1
- Costs and costing of logging operations 66 -
  - basic concepts; costs and returns; theory and methods 661
  - book-keeping 673.2
  - budgeting and reviewing of costs 667
  - costs of different phases; cost items 662 - (extraction) 662.3; (felling) 662.2; (log dumps ("landings"), timber storage etc.) 662.4; (overhead costs) 662.1
  - costs of particular assortments of wood 664
  - different kinds of cost 663 - (buildings) 663.27; (capital installations and equipment in general) 663.2; (depreciation) 663.2; (draught animals) 663.22; (interest) 663.2; (lorries (trucks) and tractors) 663.24; (losses in transport and storage) 663.4; (roads, permanent) 663.26; (roads, temporary) 663.25; (sledges, carts etc.) 663.23; (tools, implements) 663.21; (transport installations) 663.26; (wages and salaries) 663.1
  - influence of forms of management and silvicultural systems on costs 666
  - influence of stem and log size on costs 665
- Costs and profitability of timber-growing, calculation of 651 -
  - basic concepts; costs and returns; theory and methods 651.1
  - brushing and pruning 651.73
  - costs of permanent administrative arrangements 671
  - drainage 651.78
  - forest %, mean annual 651.4
  - forest rental, soil rental, profitability of the forest 651.2
  - indicating % 651.3
  - other tending operations 651.75
  - production costs of standing timber 651.6
  - pruning 651.73
  - regeneration methods 651.72
  - rotation calculations 651.5
  - thinning 651.74
- Costs (tag) --064*
- Counter-firing 432.334

- Courses of lectures (form tag) (042.4)*  
 Cover crops for tree plantations 235.42  
 Covering, seed:  
   direct sowings 232.334  
   nursery sowings 232.323.5  
 Crates, wooden 834.4  
 Credits:  
   forest products industries 794.42  
   forestry 942.1; (as method of financing) 676.2; (other) 942.12; (State, public) 942.11  
   forests as security for 942.7  
   transport 784.42  
*Credits (tag) --094.2*  
 Creosote 841.11  
 Criminal and civil wrongs (and relevant regulations) 933.8  
 Criteria and indicators for sustainable forest management 624.5  
*Critiques (form tag) (049.3)*  
 Crop rotations, nursery 232.322.1  
 Cropping practices for erosion control 116.63  
 Crops, timber, requiring special treatment 238  
 Cross-arms 831.418  
 Cross-cutting:  
   of converted timber 822.42  
   of logs (as industrial operation) 822.41; (in the forest) 323.4  
 Cross-ties 831.6  
 Crossing (plant breeding) 165.41  
 Crown, assessment of damage to 573  
 Crown condition, assessment of 572.1  
 Crown density of stands:  
   as silvicultural factor 228.11  
   measurement 533  
 Crown dimensions etc., measurement 53  
   measurement area, crown ratio, volume 531  
   measurement quantity and area of foliage 532  
 Crown form and crown relations (of individual trees or species - ecological aspects) 181.62  
 Crown wood, degree of utilization and waste 331.2  
 "Cruising," timber 524.6 -  
   methods of recording data 524.41  
   organization of parties and their work 524.46  
   see also Surveys  
 Crustacea 145.3  
 Cryptogams 172.1  
   vascular 173.5  
 Cull see Defects, Grading etc.  
 Cultivated plant communities (ecology) 182.8  
 Cultivation, shifting 261.3  
   policy 913  
 Cultivation, soil:  
   for artificial regeneration 232.216  
   for natural regeneration 231.331  
   for site amelioration 237.1  
   in nurseries 232.322.5; (weeding, hoeing) 232.325.2  
   methods of erosion control 116.62  
*Cultivation (tag) --02*  
*Culture of experimental organisms (tags) --012*  
   arthropods --012.3  
   lower organisms (plant and animal) --012.4  
   vascular plants --012.5  
   vertebrates --012.1
- Culverts:  
   forest engineering 383.8  
   use of wood in 833.5  
 Cupboards 833.156  
 Curls, leaf etc. 416.14  
*Curricula (form tag) (073)*  
 Customs and usages, business see Economics of transport, Marketing, Ports  
 "Cut," regional 905.2  
 Cutters, wood-processing, and their maintenance 823.8  
 Cutting of wood:  
   industrial processes 82  
   logging (tools and machines other than saws) 363  
   resistance of wood to 812.732  
   see also Axes, Billhooks, Saws etc.; Felling, Silvicultural systems, Thinning etc.  
 Cutting sections (forest management) 614  
 Cuttings:  
   direct planting of 232.5  
   propagation in nursery etc. (root cuttings) 232.328.2; (stem cuttings) 232.328.1  
 Cycadales 174.4  
 Cycles, business see Demand, Supply, Marketing, Prices  
 Cytogenetics:  
   animal 135  
   plant 165.41  
 Cytology, plant 168
- D**
- Damage analysis:  
   DNA 410  
   microscopy 410  
   visual 410  
 Damage by road construction 463  
 Damage:  
   to forest, valuation 652.54  
   to tree growth by recreation 468  
   to trees, due to unknown or complex causes 48  
   to trees or to wood - see *under separate agencies*, e.g. Animals, Game, Insects, Man, Fungi, Fire etc.  
 Damping off 443.2  
   protective measures in nurseries 232.327.2  
 "Dauerwald" 221.6  
 Dead trees or other plants or parts of plants, ecological role 181.76 [Litter see 114.351]  
 Decay, fungal see Fungus attack  
 Decking for bridges and piers 833.5  
 Deer 149.73  
 Defective stands, treatment of 25  
 Defects, wood (detection, recognition and assessment) 852 -  
   deductions for, in log scaling 525.5  
   due to animals 852.5  
   due to plant organisms 852.4  
   occurring before conversion 852.1  
   occurring during manufacture 852.2  
   of grain 852.15  
   of stem form 852.11  
   see also Bark pockets, Knots, Seasoning defects, "Stone" etc.  
 Defibrillation of wood 825.74  
 Deficiencies, nutrient 424.7

- Defoliation 416.11
  - assessment of 572.2
- Deforestation, policy: 913/914
  - agricultural and pastoral land 913
  - wasteland 914
- Degrees (form tag) (079.2)*
- Dehydration of specimens (tag) --016.3*
- Delivery of forest products:
  - form and place 756
  - time 755
- Demand for forest products see Marketing
- Demonstration forests 945.25 -
  - working plans for 627.2
- Dendrochronology 561.24
- Dendrology 174
- Denitrification, soil 114.61
- Density:
  - canopy, as silvicultural factor 228.11
  - crown, assessment of 533
  - of sowing (in direct sowings) 232.333; (in nursery) 232.323.2
  - of stocking, assessment of 535
  - of vegetation 182.51
- Density tests (tag) --015.26*
- Density (volume/weight):
  - of soil 114.11
  - of wood 812.31
- Depletion and increment:
  - accountancy in forest enterprises 672.2
  - regional balance of 905.2
- Deposition of eroded matter: forest injuries and protection 424.1
- Deposits from atmosphere 111.74 -
  - at earth's surface 111.744 - (liquid) 111.744.1; (solid) 111.744.2
  - on objects in upper atmosphere 111.747
- Depreciation see Costs
- Depth, soil 114.38
- Derelict stands, treatment of 25
- Description of site and stand (forest management) 622
- Desert soils:
  - temperate 114.442.5
  - tropical 114.442.7
- Desertification 181.37
- Detection, forest fire see Fire detection
- Detection (tag) --014 [for subdivision see App. A.]*
- Development,
  - animal, physiology 131.3
  - forest stands (as regards value) 653; (mensurational studies) 568
  - plant (physiology) 161.4; (post-seedling) 181.6; (seedling) 181.525
- Dew 111.744.1
- Diagrams, schematic (form tag) (084.2)*
- network diagrams (form tag) (083.58)*
- graphs (form tag) (084.21)*
- Diameter and basal-area increment (general), determination of 561.2
- Diameter, determination of 521.1 -
  - at breast height 521.2; (allowance for buttresses, root swelling etc.) 521.26; (effect of measurement errors) 521.25; (effect of rounding off values) 521.24; (effects of eccentricity) 521.23; (estimation from stump measurements 521.27); (of single stems) 521.21; (of stands (mean diameter)) 521.22
  - at other positions 521.3; (mid-diameter) 521.32; (mid-diameter tables) 521.321
- Diameter increment 561.21
  - handling of increment cores 561.23
  - sampling with borers 561.22
  - variations and trends 561.24
  - see also Growth rings, Dendrochronology
- Diaphragms for walls or ceilings 833.14
- Diaries (almanacs, calendars) (form tag) (059)*
- Diaries (literary sources) (form tag) (093.3)*
- Dicotyledoneae 176.1
- Dictionaries (form tag) (03):*
  - descriptive, of large scope (031)*
  - descriptive, small (033)*
  - language (038)*
  - technical (038)*
- Die-back 416.16
- Die-hammers (log marking) 365.3
- Dielectric constant and dielectric loss, wood 812.152
- Dies, use of wood for 835
- Diffusivity, thermal, of wood 812.141
- Digestion, animal 131.3
- Diluents for insecticides etc. 414.16
- Dimension, defects of in wood 852.2
- Diplomas (form tag) (079.2)*
- Direct sowing 232.33 -
  - date and season of 232.335
  - density of, quantity of seed 232.333
  - protective measures 232.336
  - seed covering 232.334
  - tools and equipment 232.337
  - type of sowing (patch, line etc.) 232.331
  - use of compost or fertilizers, mulching etc. 232.332
- Directions (form tag) (083.1)*
- Directories (form tag) (058.7)*
- Discolourations, leaf etc. 416.15
- Discolouration, assessment of 572.3
- Diseases, game 156.1
- Diseases, tree:
  - bacterial and fungus 443; (of older stages) 443.3; (of seed and seedlings) 443.2
  - due to unknown or complex causes 48
  - nutrient deficiency 424.7
  - protection against in nurseries 232.327.2
  - virus 444
- Disinfection and disinfestation, seed 232.315.1
- Dispersion, animal 151.2
- Disputations (form tag) (049.2)*
- Disputes, labour 968
- Dissertations and theses (form tag) (043)*
- Distillation of wood:
  - dry (destructive) 867; (with no recovery of by-products) 867.1; (with recovery of by-products) 867.2
  - see also Charcoal, Methyl alcohol etc.
  - steam etc. 866
- Distortions, leaf etc. 416.14
- Distribution, plant (natural range) 181.1
- Ditching 232.215
- Division of the area (forest management) 615
- Documentation centres, forestry 945.14
- Documents, educational (form tag) (07)*
- Dogs 149.74
- Dolphins 149.5
- Domestic mammals, forest injuries and protection 451.1
- Domestic trade see Marketing

- Domestic utility goods, use of wood in 835
  - Dominance and suppression (tree classes) 228.125
  - Dominant tree layer: as an ecological unit (community) 182.41
  - Donkeys, transport by 374.3
  - Doors, door frames and linings, sills etc. 833.151
  - Dormancy 161.41
  - Dormice 149.32
  - Dovetail joints 824.6
  - Dowelled joints 824.4
  - “Drain” 905.2
  - Drainage:
    - costs and profitability 651.78
    - engineering aspects; technique 385.1
    - for site amelioration 237.2
    - to prepare planting site 232.215
  - Draining boards 833.157
  - Draught animals:
    - costs 663.22
    - performance studies etc. 307
  - Draw-knives for barking 361.3
  - Drawings (form tag) (084.11)*
  - Dressings, protective:
    - plant, general 414.24
    - planting stock 232.412.6
    - seed 232.315.4
  - Drip, hydrological studies of 116.11
  - Driving see Floating
  - Drizzle 111.781
  - Drought 111.773 -
    - forest injuries and protection 422.2
  - Drought resistant plants 181.31
  - Drums 835
  - Dry matter production 537
  - Drying of wood 847
  - see also Air drying etc.
  - Dune fixation 116.82
  - Durability:
    - natural, of wood 814.1 -
    - of preservative-treated wood 841.4; (in laboratory tests) 841.41; (small-scale trials) 841.42; (under service conditions) 841.43
  - Durability tests (tags) cf. --014.4 and --015.4*
  - Duration (longevity) of plants 181.71
  - Dusting methods and equipment (forest protection) 414.21
  - Duties 742.3 -
    - on exports 742.32
    - on goods in transit 742.33
    - on imports 742.31
  - DVD 945.22
  - Dwarf trees:
    - arboriculture 278
    - for seed production 232.311.3
  - Dyes:
    - from other forest products 892.67
    - from wood 866.3
- E**
- Early wood 811.41
  - “Earth rays” 111.219
  - Eccentricity of stem section, mensurational effects 521.23
  - Ecclesiastical forests 922.3
  - Ecclesiastical woodwork 836.2
  - Ecology:
    - animal 15
    - general 120
    - influence of forest fires 437
    - plant 18
  - Economic botany, general 166
  - Economic significance of forests and forestry:
    - direct 906
    - indirect 907
    - see also History, Policy, Regional accounts, Statistics and resources
  - Economic zoology, general 136
  - Economics of forest products industries 79 -
    - accountancy 796
    - administration of businesses 796.8
    - assessment of financial results; balancing 796.2
    - book-keeping 796.3
    - budgetting, planning 796.7
    - business statistics 796.4
    - costs and costing 796.1
    - credits 794.42
    - financing 796.6
    - geographical considerations 791.3
    - history and general accounts of businesses 791.2
    - insurance 794.43
    - legislation; public regulation 794.3
    - nationalization; socialization 794.2
    - organizations, businesses, firms, cartels, associations etc. 791.4
    - output, variations and trends 792
    - ownership policy 794.2
    - policy, general; social economics 794
    - pricing 796.5
    - statistics (general) 791(083.4)
    - subsidies 794.41
    - theory, systematics, methods 791.1
  - Economics of forest transport 78 - [for economics of transport in logging operations see Costs and costing of logging operations]
    - accountancy 786
    - administration of businesses 786.8
    - assessment of financial results, balancing 786.2
    - book-keeping 786.3
    - budgetting, planning 786.7
    - business practices and usages 785
    - business statistics 786.4
    - chartering; shipping documents; shipbrokers 785.3
    - costs and costing 786.1
    - credits 784.42
    - financing 786.6
    - forwarding; forwarding agencies 785.2
    - freights 783
    - geographical considerations 781.3
    - history and general accounts of businesses 781.2
    - insurance 784.43
    - legislation; public regulation 784.3
    - nationalization; socialization 784.2
    - obligations of vendor and purchaser 785.1
    - organizations, businesses, firms, cartels, associations 781.4
    - ownership policy 784.2
    - policy; social economics, general 784
    - quantities transported, variations and trends 782
    - statistics, general 781(083.4)

- subsidies 784.41
- tariffs 783
- theory, methods, systematics 781.1
- see also Ports
- Economics of forestry as a business, general 64 -
  - basic economic units; classification of forest enterprises; types of economic management 643
  - book-keeping 673; (for logging operations) 673.2; (for whole enterprise) 673.1
  - budgeting 677; (of logging costs) 667
  - business problems of logging, general 66
  - business problems of timber-growing, general 65
  - business statistics 674; (data) 674.2; (theory and methods) 674.1
  - choice of species, economic 651.71
  - financial results, assessment; balancing 672; (balance of growth or calculated yield with cutting and mortality) 672.2; (basic concepts: income, returns, expenditure, outlay; surplus, profits, costs of permanent administrative arrangements) 671; (capital assets and their valuation) 672.1; (reserve funds, sinking funds) 672.3
  - financing 676; (different methods of) 676.2; (of forest improvements) 676.11; (of logging operations) 676.13; (of machines, buildings, transport installations) 676.12; (of other individual measures) 676.19
  - history and general accounts of forest businesses, forms of ownership etc. 648
  - influence of (combination with other husbandry or industry, form of ownership) 644.5; (forms of enterprise) 644.6; (growing stock-quantity, quality, structure) 644.2; (location) 644.3; (prices and wages) 644.7; (site quality) 644.1; (size of enterprise or working unit) 644.4
  - interest and its calculation 646
  - objects of business management, determination 654
  - peculiarities of forest enterprises 642
  - short-term planning 677
  - theory, methods, systems, development 641
  - see also Costs, Valuation
- Economics of forestry, social 9 -
  - generalities 90
  - theory, methods, systematics; peculiarities of forestry 901
- Economics of logging 66
  - see also Costs
- Economics of marketing see Marketing
- Economics of tree improvement 644.8
- Economics (tags):*
  - internal, business --064*
  - social, national --09*
- Economy in the use of wood 88
- Ecosystem management 627.5
- Ecosystems:
  - animal 150
  - general 120
  - plant 180
- Ecotones 182.23
- Ecotypes 187
- Edentata 149.31
- Edgers (saws) and edging 822.46
- Edging of thin sheets 826.5
- Edible plants as minor forest products 892.53
- Education:
  - forestry and forest products 945.3 - (elementary) 945.32; (higher) 945.31 see also Training
- Education (tag) --094.8*
- Educational programmes (form tag) (075)*
- Educational tours 945.35
- Efficiency see Work performance
- Elastic properties, tests of (tag) --015.26*
- Elasticity, wood 812.701
- Electrical and magnetic properties, tests of (tags) [Cf. --014.25 and --015.25]*
- Electrical influences, forest injuries and protection 426
- Electrical methods of drying wood 847.5
- Electrical methods of glue heating 824.873 -
  - radiant heat 824.876
  - radio-frequency heating 824.875
  - resistance heating 824.874
- Electrical phenomena in atmosphere 111.94
- Electrical phenomena (lightning etc.), plant, relation to 181.26
- Electrical properties, wood 812.15
- Electricity production, fuel for 831.1
- Electro-chemical properties, soil 114.23
- Elephant shrews 149.38
- Elephants 149.6
- Elephants, transport by 374.6
- Elite stands and trees: seed production from 232.311.2
- Eluvial horizons 114.361
- Embedding and sectioning (tag) --016.1*
- Embryology:
  - animal 133
  - plant 163
- Embryophyta:
  - asiphonogamous 173.1
  - siphonogamous 174
- Employers' associations 967
- Employment agencies 961.1
- Employment:
  - and unemployment 961
  - seasonal, the year round etc. 963
  - statistics 961.2
- Encyclopaedias (form tag) (03)*
  - of large scope (031); small (033)*
- Endangered animals 136.6
- Endangered plants 166.6
- Enemies, natural, of animals 151.4
- Energy forests 262
- Engineered wood:
  - production facilities 832.5
  - products 833.123
- Engineering, forest 38
- Engineering works for avalanche control 116.123.13
- Engines, cable-logging 377.23
- Enlargements, photographic (form tag) (084.16)*
- "Enrichment" of inferior growth 235.6
- Entomology 145.7
- Enumeration see Surveys, enumeration
- Environment:
  - factors of: general 10
  - influence of forest fires 437
  - influence of forest on 907.3
- Environment protection 907

- Environment relations of plants - effects on wind and other air movement 181.233
  - Environmental pollution - influence on (plant ecology) 181.45
  - Environmental protection 907.33
    - law 931.2
  - Epicormics 181.63
  - Epiphyllous plants 182.45
  - Epiphytes:
    - forest injuries and protection 442.2
    - leaf, ecology 182.45
    - stem and branch: ecology 182.44
  - Equilibrium moisture content, wood 812.213
  - Equipment see Tools, machines and equipment
  - Ergonomics 302
  - Erosion:
    - along roads, railways and canals, studies of 116.5
    - bank 116.3
    - coast 116.81; (sand fixation) 116.82
  - Erosion and erosion control, practical:
    - control by (contouring) 116.62; (engineering measures) 384.2; (farm cropping practices) 116.63; (forestry practices) 116.64
    - control on (burnt areas, roadsides etc.) 116.65; (pastured land) 116.61
    - general accounts 116.6
  - Erosion effects, forest injuries and protection 424.1
  - Erosion, water, studies of effects of: 116.2
    - cropping practices 116.27
    - forestry practices 116.28
    - meteorological factors 116.21
    - pastoral use 116.26
    - soil and geological factors 116.24
    - topography 116.23
    - vegetation 116.25
  - Erosion, wind 116.4
    - sand fixation 116.82
  - Essential oils:
    - as minor forest product 892.62
    - from wood 866.2
  - Ethyl alcohol from wood hydrolysates 863.4
  - Eumycetes 172.8
  - Eutheria 149.3/8
  - Evacuation, snow and avalanche 116.123.24
  - Evaporation 111.73 -
    - hydrological studies of effect of vegetation on 116.13
  - Even-aged stands 228.5
  - Evolution:
    - animal 135
    - plant 165.1
  - Exams (form tag) (079)*
  - Excelsior see Wood wool
  - Excretion:
    - animal 131.4
    - plant 161.35
  - Excursions, forestry etc.
    - international 971
    - other 946.2
  - Excursions (tag) --094.6*
  - Exhibitions 945.24
  - Exotics, trials of 232.11
  - Expansion, thermal, of wood 812.142
  - Expeditions, reports on (form tag) (079.3)*
  - Expenditure see Economics
  - Experimental forests 945.25
    - working plans for 627.2
  - Experimental organisms, culture and care (tags) --012*
    - arthropods --012.3*
    - lower organisms (plant and animal) --012.4*
    - vascular plants --012.5*
    - vertebrates --012.1*
  - Experiments see Research, Testing
  - Exploitability 613
  - Explosives and their use 381.1
    - for avalanche release 116.123.22
  - Exports see Marketing
  - Exposure, planting stock 232.412.4
  - Expropriation, forest valuation in cases of 652.53
  - Extinction of forest rights 935.5
  - Extraction lanes 686.33
  - Extraction:
    - seed 232.312.2
    - timber 37; (costs) 662.3; (hand tools for) 377.8; (primary conversion after) 326
  - Extractives, wood:
    - chemistry 813.2
    - utilization 866
  - Exudation from plants, mechanism of 161.13
  - Exudations, husbandry of crops grown for 284
- ## F
- Factories, wood-working, and their products 832 -
    - integrated; combinations of 832.8
    - see also Sawmills, Veneer and plywood mills, Wooden house factories
  - Factory and trade marks (form tag) (088.7)*
  - Factory buildings, special uses of wood in 833.3
  - Faggot-binders 369
  - Failed plantations, treatment 236.6
  - Fairs 945.24
  - Fallowing, nurseries 232.322.1
  - Family forestry 923.4
  - FAO 972.11
  - Farm cropping practices:
    - for practical erosion control 116.63
    - studies of hydrological and erosion effects 116.27
  - Farm forests:
    - as ownership category 923.4
    - silviculture of 264
  - Fast growing trees 238
  - Fatigue resistance, wood 812.78
  - Fats 892.63
  - Federal forests 922.1
  - Felling 323.1
    - basic types of 221.0 see also Silvicultural systems, costs 662.2
    - costs 662.2
    - debris 332.3
    - instructions 326
    - lodged trees, equipment for 364.7
    - machines 360
    - marking for 321
    - preparatory measures 322
    - season 322.1
    - series 614
    - tools 36
    - with axe and hand saw 323.11
    - with machine saws 323.12
    - with other machines 323.13
    - see also Work performance

- Felling-site:
  - clearing after felling 332
  - clearing for uses other than forestry 332.4
  - clearing of obstacles etc. before felling 322.6
  - see *also* Re-logging, Snags, Slash, Stumps
- Fellings:
  - area, location and sequence 614
  - degree of utilization and waste 331
  - inventory and control 327
  - salvage 334
  - see *also* Silvicultural systems, Regeneration
- “Femelschlag” 221.23
- Fences, use of wood in 831.5 -
  - paling 831.52
  - posts, stakes 831.51
  - rails 831.53
- Fencing (as protection) 451.4
- Fenny soils 114.444
- Ferns 173.5
- Fertility, soil see Soil fertility
- Fertilizing and fertilizers:
  - at time of planting 232.425; (inorganic, including trace elements) 232.425.1; (organic) 232.425.2
  - fertilizer requirement of soils 114.54
  - for site amelioration 237.4
  - general information on fertilizers 232.322.4
  - in direct sowings 232.332
  - in natural regeneration 231.332
  - in nurseries 232.322.4; (inorganic) 232.322.41; (organic) 232.322.43; (trace elements) 232.322.42
  - injuries due to 424.6
- Fibre mouldings, resin-bonded 862.3
- Fibre-saturation point 812.212
- Fibreboards 862.3
- Fibres from minor forest products, utilization 892.73
  - see *also* Bark crops, Bark products, Seed fibres
- Fibres, wood 811.155 -
  - gelatinous 811.158
  - other topics 811.159
  - shape, dimensions etc. 811.156
- Fidelity (plant ecology) 182.51
- Field crops, forest with 261 -
  - coppice with 261.2
  - high forest with 261.1
  - [shifting cultivation see 261.3]
- Field survey work 581
- Figure, wood 811.67
- Filling blanks in young crops 236.5
- Films, forestry etc 945.22
- Films (form tag) (084.122)*
- Filtration in soil 114.123
- Finance (tag) --064*
  - see *preferably* Economics, Marketing
- Financing of certification and conservation 676.4
- Finishing, wood 829.1
- Finishings and fittings, wood 833.15
- Fire and fire protection (tag) --043*
- Fire:
  - beneficial effects; uses 436
  - injurious effects 435
- Fire see *also* Burning
- Fire damage, forest:
  - from economic point of view 435.2
  - salvage and disposal of damaged material 433
- Fire danger, forest 431 -
  - current ratings and forecasts 431.5
  - influence of fuel 431.2
  - influence of weather 431.1
  - reduction of 432.16
  - seasonal and other periodic variations 431.4
- Fire detection and reporting, forest 432.2 -
  - aerial observation 432.23
  - ground patrols 432.22
  - look-out system 432.21[construction of towers see 382.4]
  - use of reports from outside observers 432.24
- Fire injuries, forest 435
  - to human life and property 435.4
  - to trees, types and effects 435.3
- Fire losses, forest 435.2
- Fire prevention and control, forest 432 -
  - benefits of 435.1
  - campers and smokers 432.13
  - general preparedness and organization: “pre-suppression” 432.0
  - incendiarism 432.14
  - logging installations 432.12
  - railways 432.11
  - reduction of natural hazard 432.16
  - undesirable effects 435
  - see *also* Firebreaks
- Fire, reaction of plants to 181.43
- Fire resistance:
  - plants and trees 181.43
  - treated wood 843.4
- Fire resistance, wood: natural 812.143
- Fire suppression, forest 432.3 -
  - analysis of action and results 432.38
  - appraisal of situation and forces needed 432.31
  - auxiliary dispositions 432.35
  - basic methods (selection and application) 432.34; (types) 432.33
  - beating or raking out 432.333
  - counter-(back-)firing 432.334
  - dispatch and transport of teams and supplies 432.31
  - mopping up 432.37
  - patrolling 432.37
  - plans of operation; strategy and tactics 432.32
  - teams, size, duties etc. 432.36
  - use of foam, liquids, water 432.331
  - use of soil, fire lines 432.332
- Firebreaks, permanent:
  - cleared 432.18
  - living 432.17
- Fireplaces, wood in 833.153
- Fireproofing of wood 843 -
  - agents 843.1
  - effect on gluing 824.88
  - methods; processes 843.2
  - particular categories of wood 843.3
  - resistance of treated wood to fire 843.4
- Fires, forest 43 -
  - behaviour 431.6
  - causes of 431.3
  - predisposing factors 431
  - types and behaviour of 431.6
- Fish management and fishing 157
- Fishes 147.2/5



- Flagellates 172.5
- Flagmasts 831.43
- Flakeboard 862.2
- Flaking, of wood 825.72
- Flame guns and hoes for nursery weeding 232.325.23
- Flat sawing 822.1
- Flecks, pith 852.13
- Floating and driving 378.31 -
  - bundling 378.2
  - combined with rafting 378.32
  - getting wood into and out of water 378.1
  - installations and equipment 378.7
  - prevention of sinking 378.44
  - prevention of stranding 378.41
  - salvage of stranded wood 378.42
  - salvage of sunken wood 378.45
  - sorting of timber floated jointly 378.5
  - see also Rafting
- Flood control 116.7
  - engineering works for 386
- Flooding, injuries to trees 424.2
- Floors, wood 833.18
- Floras (regional taxonomic works covering vascular plants) 174 [with geographic number]
- Flosses:
  - as minor forest products 892.73
  - growing and collection 283.4
- Flower buds 164.6
- Flowering 181.521
- Flowers and flower buds:
  - injuries to 416.2
  - morphology 164.6
- Flumes 373.4
- Flying lemurs 149.39
- Fodder:
  - as minor forest product 892.1
  - cellulose for 861.6
  - wood sugar for 863.6
- Fodder forests, silviculture 262
- Fog 111.75
- Fog-drip, contribution to local precipitation 116.14
- Food, from the forest 892.1
- Forage plants 268.3 -
  - undesirable 268.44
- Forage types and yields 268.5
- Forecasting:
  - fire danger 431.5
  - increment 564
  - meteorological 111.0
- Foreign bodies in wood 852.17
- Forest and utilities, relation 917
- Forest certification 633
- Forest certification related to marketing 742.41
- Forest communities 188
- Forest concessions 652.58
- Forest condition monitoring 57
- Forest fires:
  - country reports and statistics 430
  - effects on environment and ecology 437
- Forest models 612
- Forest %, mean annual 651.4
- Forest pathology 44
- Forest products other than wood:
  - as products 89
  - growing and collection 28
- Forest rental, soil rental, profitability of the forest 651.2
- Forest rights-(servitudes) etc. influence on economics 644.9
- Forest see Coppice, High forest, Mixed forest etc.
- Forest services (national, federal, state) 681 -
  - administrative procedure 681.7
  - position in relation to government departments 681.1
  - staff, conditions of service, responsibilities etc. 681.4
  - staff, establishment, ranks and categories 681.3
  - structure, branches and units 681.2
- Forests and forestry 0 -
  - general: (descriptive) regional accounts 904 see also Economics, Resources, Statistics etc.
  - history 902
- Form:
  - classes 524.13
  - factors 524.12
  - height 524.12
  - increment 561.3
  - mathematical, mechanical and other expressions of 524.11
  - of bark, mensurational aspects 523.2
  - of branches, mensurational aspects 524.18
  - of particular portions of bole (top, root swelling etc.), mensurational aspects 524.15
  - of plants and trees, ecological aspects 181.6
  - of trees, mensurational aspects 524.1
  - point 524.13
  - quotient 524.13
  - timber defects 852.11
- Forms, printed, blank (form tag) (083.2)*
- Forwarding; forwarding agencies 785.2
- Fossilized wood 814.8
- Foundations, wood in 833.11
- Foxes 149.74
- Fragmentation of holdings 928
- Frame saws and sawing 822.32
- Frames:
  - door 833.151
  - window 833.152
- Frames, propagating:
  - cold 232.329.3
  - heated 232.329.2
- Framing of buildings, wood in 833.12
- Free provision by public authorities of land, seed, planting stock etc. 941
- Freezing of soil: forest injuries and protection 422.14
- Freights 783
- Frequency (plant ecology) 182.51
- Friction in chutes, slides etc. 373.0
- Frictional properties, wood 812.13
- Frictional tests (tags) cf. --014.23 and --015.23*
- Fringe of forest 267
- Frost 111.24
- Frost-heaving 422.13
- Frost injuries and protection 422.1 -
  - early frost 422.11
  - late frost 422.12
  - low winter temperatures 422.15
  - protection in nurseries 232.327.13
  - soil freezing 422.14
- Frost pockets 422.18
- Fruit:
  - as minor forest product 892.71
  - crops 283
  - growing and collection 283.1
  - morphology 164.7

- Fruiting 181.522
  - Fuel forests 262
  - Fuel:
    - lignin as 864.1
    - waste wood as 839.81 - (briquettes and briquetting) 839.813; (other wastes) 839.812; (sawdust) 839.811; (wood-burning stoves etc.) 839.82
  - Fuel (tag) --081.7*
  - Fuelwood 831.1
  - Fumes: forest injuries and protection 425.1
  - Fumigation:
    - as method in forest protection 414.23
    - of seed 232.315.1
    - to destroy animal pests in wood 845.53
  - Fungi:
    - as a non-wood forest product 894.1
    - slime 172.4
    - true 172.8
  - Fungicides:
    - for converted wood 844.41
    - for forest protection 443:414.12; (auxiliary materials, dilutents etc.) 443:414.16; (side effects of) 443:414.4 see also Dusting, Spraying etc.
  - Fungus attack on converted wood:
    - as defect 852.4 - [see preferably subheads of 844]
    - by sap-staining and mould fungi 844.1
    - by wood-rotting fungi 844.2
    - prevention and control [cf. also Preservation] 844.4; (by fungicides) 844.41; (by heat treatment) 844.44; (by other methods) 844.45; (during storage and shipment) 844.47; (in building construction) 844.48
  - Fungus attack on wood: measures against in advance of felling 322.4
  - Fungus diseases of trees and protection against them 443 -
    - diseases of older stages 443.3
    - diseases of seed and seedlings 443.2
    - protection measures in nurseries 232.327.2
  - Furniture making 836.1
- G**
- Galls 416.13
  - Game:
    - damage and protection (from point of view of the game manager) 156.5; (forest protection aspects) 451/452
    - management (general) 156; (history of) 156.7; (plans, surveys, protection of game and hunting) 156.2; (statistics) 156.9
    - policy; legislation 156.6
    - products and their utilization 156.4
    - reserves, sanctuaries 156.2; (significance of forest for) 907.13
    - science (natural history, diseases, pests etc. of game) 156.1
    - see also Birds, Mammals, Hunting
  - Gang saws and sawing 822.32
  - "Gardens," forest 232.11
  - Gas, producer; from wood or charcoal 867.3 -
    - for industrial use 867.32
    - for propelling vehicles 867.31
  - Gases:
    - circulation in plants 161.15
    - emission from plants 161.16
    - flow of in wood 812.237
    - forest injuries and protection 425.1
    - in soil 114.13
    - permeability of wood to 812.237
    - uptake and movement by plants 161.14/.16
    - uptake by plants 161.14
  - Gates, wooden 831.54
  - Gauges, tree and log 365.5
  - Gelatinous fibres, wood 811.158
  - General ecology 120
  - Genetic classification, soil 114.44
  - Genetic constitution of plants 165.4 -
    - chromosomes of taxonomic groups 165.42
  - Genetic mapping 165.2
  - Genetics:
    - animal 135
    - molecular 165.2
    - quantitative 165.45
  - Genomics 165.2
  - Geographic atlases (form tag) (084.41)*
  - Geographical factors in economics of:
    - forest products industries 791.3
    - forestry 644.3
    - prices 732
    - transport 781.3
  - Geological considerations in soil formation and development 114.32
  - Gerbils 149.32
  - Germination 181.525
    - effects of sorting and grading seed 232.312.3
    - tests 232.318
  - Giant pandas 149.74
  - Ginkgoales 174.6
  - Giraffes 149.73
  - Girders:
    - composite-wood 832.286
    - wood 833.121
  - Girdling 243.8
  - Girth see Diameter
  - Glands, physiology of: in animals 131.4
  - Glass, use of: in nursery sowings 232.323.7 [*Cf. also Greenhouses, Frames*]
  - Glazed ice 111.744.2
    - forest injuries 423.3
  - Gley horizons 114.364
  - Gleys (as soil type) 114.443.1
  - Global positioning systems (GPS) 387.3
  - Global warming 111.83
  - Glossaries see Dictionaries
  - Glued joints, general 824.7
  - Glues 824.81
    - use of lignin in 864.4
  - Glues, metal-bonding 824.84
  - Glues, natural 824.82 -
    - animal 824.821
    - blood albumin 824.822
    - casein 824.823
    - other natural glues 824.829
    - starch derivatives 824.824
    - vegetable protein 824.825
  - Glues, synthetic 824.83 -
    - melamine 824.831
    - other synthetic 824.839
    - phenolic 824.832
    - resorcinol 824.833
    - urea 824.834

- Gluing 824.86
    - effect of preservatives, fireproofing agents etc. 824.88
  - Gluing, heating methods in 824.87 -
    - electrical, general 824.873
    - electrical resistance 824.874
    - radiant heat 824.876
    - radio-frequency 824.875
    - steam and hot water 824.872
  - Gnetales 174.9
  - Gophers 149.32
  - Government publications (form tag) (061)*
  - Gradient 113.3
  - Grading:
    - planting stock 232.411.3
    - seed 232.312.3
    - seedlings for lining out 232.324.2
    - stress grading (mechanical) 854.212; (visual) 854.211
    - wood, converted (classification by size and shape) 854.1; (quality grading) 854.2; (stress grading) 854.21
    - wood in the rough (logs) 853
    - see also Defects
  - Graft hybrids 165.73
  - Grafted dwarf trees as seed producers 232.311.3
  - Grafting 232.328.5
  - Grain, wood 811.64
    - defects of 852.15
  - Graphs (form tag) (084.2)*
  - Grass as minor forest product 892.1
  - Gravity as factor in chutes, slides etc. 373.0
  - Grazing:
    - forest 268.1
    - open ranges (pastures) 268.2
    - organization and control 268.6
    - to prepare for artificial regeneration 232.212
    - to prepare for natural regeneration 231.323
    - see also Forage, Mammalia, Pastures
  - Green manuring:
    - nurseries 232.322.1
    - planting sites 232.425.2
  - Greenhouse effect 111.83
  - Greenhouses 232.329.1
  - Grey-brown podzolic soils 114.441.4
  - Grey semi-desert soils 114.442.4
  - Grinding, wood 825.73
  - Ground, configuration of 113.4
  - Ground flora (layers) 182.47/.48 -
    - herbaceous 182.47
    - moss or lichens 182.48
    - use as index to soil fertility ("forest types") 114.521.7
  - Ground vegetation, manipulation for:
    - artificial regeneration 232.21; (by burning) 232.213; (grazing) 232.212; (other herbage control) 231.324
    - natural regeneration 231.32; (by burning) 231.322; (by cutting, scraping etc.) 231.321; (by grazing) 231.323; (by poisoning) 231.324
  - Groundwater 114.129
  - Groundwater soils:
    - non-peaty 114.443
    - peaty 114.444
  - Groundwood pulping and pulp 861.11
  - Group selection system 221.411
  - Group system 221.23
  - Groups, regeneration by 230.2
  - Growing stock:
    - description of 622
    - influence on economics of the enterprise 644.2
    - planning of quantity and composition 624.2
    - theory of, relation to increment and yield 612
    - value of 652.3
  - Growth, animal, physiology 131.3
  - Growth factors, variation of wood structure and properties with 815
    - effects of: (growth form; spiral growth, forking etc.) 815.5; (pruning) 815.4; (rate of growth) 815.2
  - Growth of trees and forests, mensurational aspects see Increment
  - Growth, plant:
    - physiology 161.4
    - relation to environmental factors 181.65
  - Growth regulators, plant:
    - physiological aspects 161.4
    - use in forest protection 414.13
  - Growth rings:
    - age determination in absence or irregularity of 553
    - increment determination in absence or irregularity of 563 [see also Diameter increment, Dendrochronology]
  - Growth rings, wood anatomy 811.4
  - Growth stresses in wood 815.1
  - Guidebooks (form tag) (036)*
  - Gum crops, growing and collection 284.2 [*Cf. also Resin*]
  - Gum veins in wood 852.14
  - Gums:
    - as minor forest product 892.65
    - from wood 866.5
    - Cf. also Resin*
  - Gutta percha:
    - as product 892.66
    - crops: growing and collection 284.3
  - Gymnospermae 174.2
- H
- Habit of growth 181.61
  - Habits of animals 151
  - Hail 111.787
    - forest injuries 423.6
    - wood defects caused by 852.19
  - Hammers:
    - cleaving 363.3
    - marking 365.3
  - Hamsters 149.32
  - Handbooks (form tag):*
    - as books (02)
    - comprehensive (021)
    - manuals (035)
    - of limited scope; elementary, popular etc. manuals (023)
  - Handcarts, logging 377.43
  - Handling (and storage) of wood in timberyards etc. 848 -
    - handling of converted wood 848.2
    - handling of round wood 848.1
  - Handling of wood during felling operations, tools and equipment 364 see also Loading, Transport etc.
  - "Hang-ups"; equipment for bringing down 364.7
  - Harbours see Ports
  - Hardening off of nursery plants 232.325.5

Hardness, wood 812.73 -  
     resistance to abrasion 812.733  
     resistance to cutting 812.732  
     resistance to indentation 812.731  
 Hardpan *see* Pan  
 Hares 149.32  
 Harmful animals, general 136.5  
 Harmful plants, general 166.5  
 Harvesters 360  
*Harvesting (tag) --03*  
 Hauling *see* Transport  
 Hazard mapping, snow and avalanche 116.123.14  
 Head-saws 822.45  
 Heads, animal 156.42  
 Heartwood 811.52  
     abnormal, as defect 852.16  
 Heat (air temperature) 111.24  
     forest injuries and protection from 422.2  
 Heat exchange, snow 116.121.33  
 Heat, specific, of wood 812.145  
 Heat treatment of wood:  
     to control animal attacks 845.54  
     to control fungus attacks 844.44  
 Heather, as minor forest product 892.81  
 Hedge plants 274  
 Hedgehogs 149.36  
 Hedgerow trees 265  
 Hedges 274  
 Heeling in 232.412.3  
 Height increment 561.1  
 Height measurement 522 -  
     curves and tables 522.31  
     felled trees 522.1  
     single standing trees 522.2  
     stands (mean height) 522.3  
 Helicopter logging 376  
 Hemicelluloses, as wood constituents 813.14  
 Hepatics 173.2  
 Herbaceous layer (vegetation) 182.47  
 Herbage control, for artificial regeneration 232.212/.214  
     *see also* Burning, Grazing, Weeds  
 Herbaria 170.1  
 Herbicides 441:414.12  
     auxiliary materials, diluents etc. 441:414.16  
     growth regulators as 441:414.13  
     side effects of 441:414.4  
 Heredity:  
     animal 135  
     plant 165.3  
 Heterotrophic plants, assimilation in 161.37  
 Hewing, rough 323.8  
     tools and machines for 363  
     *see also* Adzing  
 Hewn timber 831.7  
 Hexosans, as wood constituents 813.16  
 Hibernation 151.22  
 Hides, animal 156.42  
 High forest:  
     systems 221  
     two-storeyed 221.52  
     with field crops 261.1  
     with reserves (standards) 221.51  
 Hiking trails 907.15  
 Hippopotamuses 149.73  
 Histology:  
     animal 138  
     plant, general 168  
*Historical sources (form tag) (093)*  
 History:  
     of forests and forestry 902  
     of game management and hunting 156.7  
     of organizations 902.2  
     of vegetation 182.1  
     *see also* Economics  
*History (form tag) (091)*  
*History (tag) --090.2*  
 Hoar-frost 111.744.2  
     forest injuries 423.2  
 "Hogging" of wood 825.71  
 Holdings, forest workers' (policy) 965  
 Holdings, scattered forest, consolidation of 928  
 Holes in wood, repair of 829.14  
 Holocellulose, as wood constituent 813.12  
 Homepages 945.28  
 Honey, as minor forest product 893  
 Honeycombing of wood 852.34  
     *see also* Seasoning defects  
 Hoppus measure 516.25  
 Horizons, soil 114.35/.36 -  
     A 114.361  
     B 114.362  
     C 114.363  
     eluvial 114.361  
     gley 114.364  
     humus layers 114.354; (mor, raw humus) 114.355;  
         (mull, mild humus) 114.356  
     illuvial 114.362  
     litter 114.351  
 Horse, transport by 374.3  
 Horses 149.72  
 Horsetails 173.5  
 Horticultural uses of wood:  
     in structures 833.4  
     miscellaneous uses 831.5  
 Hounds 156.3  
*House journals (form tag) (085.3)*  
 Household refuse for nursery compost 232.322.44  
 Houses, wooden, factory-produced *see* Wooden-house  
     factories  
 Housing, forest workers' (policy) 965  
 Humans 149.8  
 Humidity, atmospheric 111.71 -  
     hydrological studies of effect of vegetation on  
     116.13  
 Humus:  
     incorporated 114.27  
     layers 114.354  
     mild 114.356  
     raw 114.355  
     soils 114.461  
 Hunting and shooting 156 -  
     history 156.7  
     policy; legislation 156.6  
     products 156.4  
     technique, weapons, hounds 156.3  
     *see also* Game

- Husbandry (tags) --02*  
*animal --023*  
*plant --022*  
*soil --021*
- Huts for forest workers 382.3
- Hybridization (plant breeding) 165.41
- Hybrids:  
 artificial 165.72  
 graft 165.73  
 natural 165.71  
 taxonomic aspects 165.7  
 trials of 232.13
- Hydraulic uses, wood in 833.8
- Hydrology 116
- Hydrolysis, wood 863; (processes) 863.1  
*see also* Sugar, Yeast
- Hyenas 149.74
- Hygiene, work 304
- Hygienic value of forests 907.4
- Hygroscopicity:  
 soil 114.125  
 wood 812.21; (treatments to reduce) 842.2
- I**
- Ice, glazed 111.744.2  
 forest injuries 423.3
- Ice needles (form of precipitation) 111.784
- Ice storm 111.744.2
- Ichthyology 147.2/5
- Identification (tag) --014 [which see for subdivisions]*
- Ignition of wood:  
 chemical aspects 813.4  
 physical aspects 812.143
- Illustrations (form tag) (084.1)*
- Illuvial horizons, soil 114.362
- Images (form tag) (084)*
- Impact bending strength of wood 812.712
- Implements *see* Tools
- Imports *see* Marketing
- “Improved wood”:  
 general 842  
 treatments for specific purposes 842; (to improve resistance to chemicals) 842.5; (to improve strength) 842.3; (to reduce effects of hygroscopicity) 842.2
- Improvement fellings 243
- Improvements, forest:  
 financing of 676.11  
 public supervision and control 935.2  
*see also* Costs
- Inaugural dissertations (form tag) (043.5)*
- Increment:  
 and depletion (accountancy in forest enterprises) 672.2; (regional balance of) 905.2  
 forecasting 564  
 gross, of stands 562.21  
 net change, of stands 562.21  
 per cent 561.6  
 role of mortality and thinnings 562.22  
*see also* Height increment, Volume increment etc.
- Increment and yield determination 56 -  
 in spp. with irregular or no growth rings 563
- Increment borers, sampling with 561.22
- Increment cores, handling and examination 561.23
- Increment fellings 243
- Indentation, resistance of wood to 812.731
- Indicating % 651.3
- Indicator plants 114.521.6
- Indirect significance of forests and forestry *see also* Influences, Recreation, Rural amenity etc.
- Industrial catalogues (form tag) (085.2)*
- Industrial undertakings, publications of (form tag) (085)*
- Industries:  
 forest products 8  
 forests belonging to 923.2  
 relation of forests and forestry to 908.2  
*see also* Economics
- Infiltration capacity, soil 114.123
- Infiltration, effects of:  
 cropping practices 116.27  
 forestry practices 116.28  
 meteorological factors 116.21  
 pastoral use 116.26  
 soil and geological factors 116.24  
 topography 116.23  
 vegetation 116.25
- Inflorescences 164.6
- Influence of forms of management and silvicultural systems on costs 666
- Influences of forest:  
 on religion, art etc. 907.6  
 on the environment 907.3
- Information bulletins (form tag) (055)*
- Information services:  
 forestry and forest products 945.14  
 marketing 741.5  
 on trade 742.6
- Information systems 945.5
- Infra-red heating *see* Radiant heat
- Ingrowth *see* Recruitment
- Injection:  
 plant 414.26  
 soil 414.27
- Injuries, forest 4 -  
 due to salt 424.4  
 due to unknown or complex causes 48  
 planning management to minimize 624.4  
 to bark and cambium 416.4  
 to buds, leaves and shoots 416.1  
 to flowers, cones, fruits, seeds 416.2  
 to roots 416.3  
 to wood 416.5  
*see also* Damage, Fungus diseases, Fire, Insects etc.
- Injurious removal of forest produce 462
- Inoculation, soil:  
 for site amelioration in checked plantations etc. 237.4  
 in direct sowings 232.332  
 in nurseries 232.322.45  
 on planting sites 232.425.4
- Insect attack on converted wood, as defect [*see preferably* subheads of 845] 852.5  
 by borers (marine) 845.1; (terrestrial) 845.2  
 by termites 845.3  
 control and prevention [Cf. also Preservation] 845.5;  
 (in buildings) 845.58; (during storage and shipment) 845.57  
*see also* Insecticides, Fumigation, Heat treatment
- Insect attack on seed and young plants, protection against:  
 in direct sowings 232.336

in nurseries 232.327.4  
 seed disinfection 232.315.1  
 Insect attack on trees, and protection against attack 453  
 Insect attack on wood, measures to reduce, in advance of felling 322.4  
 Insecta 145.7  
 Insecticides, for converted wood 845.51  
 Insecticides, for use on trees etc. 453:414.12; (auxiliary materials, dilutents, etc.) 453:414.16; (side effects of) 453:414.4  
*see also* Dusting, Spraying etc.; Preservatives  
 Insectivora 148,36  
 Insolation 111.211  
 injuries and protection 422.3  
 protection against in nurseries 232.327.12  
 Inspection paths:  
 in regeneration or young plantations 236.4  
 planning etc. 686.34  
 Instinct 151.6  
 Institutions, forestry and forest products 946.3  
*Institutions: (tag) --094.6*  
 Instructions, felling 326  
*Instructions (form tag)*  
*recipes, prescriptions, directions (083.1)*  
*directions for use (083.13)*  
 Instruments (mathematical, musical and scientific), use of wood in 835  
*Instruments (tags) cf. --017 and --087 and note at --017*  
 Insurance:  
 forest 943  
 forest products industries 794.43  
 forest workers' 964  
 transport 784.43  
*Insurance: (tag) --094.3*  
 Integrated pest management 415.1  
 Integrated wood-processing mills and combinations 832.8  
 Intellectual property, seeds 232.314  
 Intercellular canals and spaces 811.25  
 Interception:  
 rain 116.11  
 snow 116.12  
 Interest in forestry and its calculation 646  
 as item in logging costs 663.2  
*International activities (tag) --097*  
*International agreements (form tag) (094.2)*  
 International forest policy and collaboration 97 -  
 agreements 973; (other) 973.2; (State) 973.1  
 congresses, conferences, excursions 971  
 organizations 972; (forest owners') 972.3; (forest workers') 972.4; (other organizations) 972.9; (scientific (non-State)) 972.2; (State) 972.1; (State, FAO) 972.11; (State, other) 972.12  
*International laws (form tag) (094.2)*  
 International trade *see* Marketing  
 Internet 945.28  
 Interplanting ("enrichment") of inferior growth 235.6  
 Interplanting for site amelioration 237.5 -  
 with nurses 237.52  
 with substitute species 237.51  
 Interpretation, aerial photographs 587.2  
*Interviews (form tag) (047.53)*  
 Intolerance *see* Shade etc.  
*Inventories (form tag) (083.8)*

Inventory, forest *see* Surveys, enumeration  
 Inventory of fellings 327  
 Invertebrata 142  
 Irregular shelterwood system 221.23  
 Irrigated forests 263  
 Irrigation:  
 for site amelioration 237.6  
 of nurseries 232.325.1  
 of plantation sites before planting or sowing 232.217  
 technique (engineering) 385.2  
 Irritability in plants 161.8  
 Irritant constituents and properties of woods 813.8

## J

Jacks, log 364.5  
 Jigs, wooden 835  
 Joinery:  
 building components and fittings 833.15  
 general 828  
 Joints; jointing and assembly of wood 824 -  
 bolted 824.3  
 carpenters' and joiners' 824.6  
 dowelled 824.4  
 glued 824.7  
 nailed 824.1  
 screwed 824.2  
 timber-connector 824.5  
 Juvenile wood 811.53

## K

Ketones from dry distillation of wood 867.6  
 Kiln drying, wood 847.2  
 Kiln types 847.27 -  
 compartment 847.275; (external blower) 847.277;  
 (forced draught, general) 847.277/.278; (internal fan) 847.278; (natural circulation) 847.276  
 progressive 847.271; (external blower) 847.273; (forced draught, general) 847.273/.274; (internal fan) 847.274; (natural circulation) 847.272  
 Kinos 892.65  
 Kitchen fitments 833.157  
 Knives, woodmen's 363.2  
 Knots as defect 852.12

## L

Laboratories, uses of wood in 833.3  
 Labour disputes, forest 968  
 Labour:  
 forest, management of 684 *see also* Labour policy, Work performance etc.  
 organization in sawmills 832.14  
 organization in veneer and plywood mills 832.24  
 Labour policy, forestry and forest products 96  
 employment and unemployment; supply and demand 961  
 seasonal variations in work and working time 963  
*see also* Insurance, Housing, Associations, Unions etc.  
*Labour policy (tag) --096*  
 Labourers' quarters, construction 382.7  
 Lac:  
 as minor forest product 893  
 cultivation and collection 288  
 Ladders:  
 for forest work 369  
 use of wood in 831.9  
 Laminated veneer lumber 832.287

- Laminated wood products 832.28
  - blockboard 832.283
  - composite-wood assemblies 832.286
  - plywood 832.282
  - “sandwich materials” 832.284
- Lammas shoot 181.66
- Land, forest:
  - and non-forest 615
  - gifts or cheap sales by public authorities for forestry 941
  - value of 652.2
- Land reform 921
- Land use 91 -
  - afforestation policy 913/914 (agricultural and pastoral land) 913; (waste land) 914
  - colonization and settlement 912
  - deforestation (policy) 913/914 (agricultural and pastoral land) 913; (waste land) 914
  - generalities, planning 911
  - multiple 916
  - relations between forest, agricultural and pastoral land 913
  - relations between forest and waste land 914
  - shifting cultivation (policy) 913
  - surveys, use of aerial photography 587.7
- “Landings” see Log dumps
- Landscape conservation 907.1
- Landslides:
  - constructional works against 384.1
  - forest injuries and protection 424.1
- Language dictionaries (form tag) (038)*
- Large private forests:
  - of industrial, mining and communications companies etc. 923.2
  - other 923.3
- Late wood 811.42
- Laterite and lateritic soils 114.441.7
- Latex:
  - as minor forest product 892.66
  - crops, growing and collection 284.3
- Latex canals in wood 811.25 -
  - as defect 852.14
- Latitude 113.1
  - influence on climate 111.81
- Lavatory fitments, wooden 833.158
- Law books (form tag) (094.4)*
- Law, relating to environmental protection 931.2
- Law, relating to nature conservation 931.2
- Laws, general forest 931
- Layer communities (vegetation) 182.4
- Layering:
  - natural 181.51
  - propagation by 232.328.4
- Leaching, soil 114.31
- Leaf buds, morphology 164.4
- Leaf crops, growing and collection 285
- Leaf fodder:
  - as minor forest product 892.1
  - silviculture of woods maintained for 262
- Leases, public supervision and control 935.6
- Leaves:
  - injuries to 416.1
  - morphology 164.5
- Lectures: addresses, lectures, speeches (form tag) (042)*
- Legal documents (form tag) (094)*
- Legal sources (form tag) (094.7)*
- Legal textbooks (form tag) (094.4)*
- Legislation, forest 93 -
  - general forest laws 931
  - see also Game, Economics, Marketing, Public supervision and control of forestry
- Legislation (tag) --093*
- Lemmings 149.32
- Lemurs 149.8
- Length (of logs etc.), measurement 522
- Letters (form tag) (044)*
- Levers, log 364.5
- Leys, nursery 232.322.1
- Lianes 182.43 -
  - cutting 244
- Libraries 945.15
- Licences, public supervision and control 935.6
- Lichens 172.9
  - as a non-wood forest product 894.3
  - growing 289.6; (for decoration) 289.62; (for reindeer) 289.61
- Lichen layer (vegetation) 182.48
- Life form, plants 181.61
- Lifting:
  - of planting stock 232.412.1
  - of seedlings 232.324.1
- Light 111.211
- Light relations of plants 181.21 -
  - effect on the environment 181.213
  - photoperiodic behaviour 181.212
  - requirements, tolerance in general 181.211
  - seasonal requirement and tolerance 181.212
- Lighting fitments and accessories, wood in 833.154
- Lightning 111.94
  - forest injuries 426.1
  - relations of plants to 181.26
  - wood defects due to 852.19
- Lignin as wood constituent (chemistry) 813.11
- Lignin, uses of 864 -
  - as fuel 864.1
  - as soil amendment 864.2
  - in adhesives 864.4
  - in plastics 865.2
  - in road-making compounds 864.5
  - in water softeners 864.3
  - vanillin from 864.6
- Limbing see Trimming
- Limbs, artificial 835
- Lime (nursery) 232.322.417
- Line sowing (direct) 232.331
- Linear and area measures 514 -
  - British and American 514.2
  - metric 514.1
  - other 514.9
- Lining out 232.324
  - density 232.324.3
  - grading seedlings for 232.324.2
  - season and date of 232.324.4
- Linings, door 833.151
- Liquids:
  - behaviour of wood with 812.2; (permeability to and flow of liquids other than water) 812.235; (sorption of liquids other than water) 812.22
  - circulation in plants 161.12

exudation from plants 161.13  
uptake and movement in plants, physiology 161.1  
uptake by plants 161.11  
see also Moisture, Water etc.

*Lists (form tag):*

*bibliographical, of references (048.1)*

*in general (083.8)*

*of addresses (058.7)*

*Literary sources (form tag) (093.3)*

Litter 114.351

as minor forest product 892.1

degree of utilization and waste 331.5

use in nurseries 232.322.44

Liverworts 173.2

Loading:

equipment 377.1

in ports (economic aspects) 788.3

of barges and boats 378.8

platforms (forest engineering) 383.8

technique 371

Loam soils 114.464

Loans see Credit

Locality factors 11

Location see Geographical factors

Locomotion, physiology (in animals) 131.7

Locomotives 377.73

Locomotory organs of animals 134.7

Lodged trees, equipment for bringing down 364.7

Loess soils 114.468

Log dumps, storage of wood 34 -  
costs of 662.4

Log levers and jacks 364.5

Log ponds 848.42

Log "scaling" (measurement of contents) 526 -

by formula 526.5; (based on butt diameter) 526.53;

(based on top diameter) 526.51; (based on mid-

diameter or mean of top and butt) 526.52; (measu-

rement by sections) 526.54

by log rules 526.6

by water displacement 526.2

by weight 526.1

conversion from one method to another 526.7

Log size, influence on logging costs 665

Logging arches 377.41

Logging camps:

construction etc. 382.3

costs 663.27

Logging damage 461

Logging:

descriptions of individual operations (as distinct from  
the individual phases of logging) 312

economics of 66

financing of 676.13

general 31

machines 360

planning of operations 311

sequence of operations in 326

see also Costs, Extraction, Felling, Transport etc.

Logs, fallen: ecological role 181.76

Longevity of plants 181.71

Longitude 113.1

Look-out:

system 432.21

towers, construction 382.4

Lopping:

as silvicultural system 222.3

before felling 322.5

see also Trimming (of logs)

Loris 149.8

Lorries 377.45

costs of 663.24

Lorry, transport by 375.5

Losses of wood during transport and storage, as item in  
logging costs 663.4

Low winter temperatures, forest injuries and protection  
422.15

Lumber in general 832.181 -

classification by size and shape 854.1

see also Grading

Lumber, Laminated veneer 832.287

Lumbering see Logging

Lustre of wood 812.115

Lymph, physiological aspects 131.4

Lymph system 134.4

## M

Machetes 363.2

Machines, machinery see Tools, machines and equip-  
ment

Macrobiology, soil 114.68

Macronutrients 160.243

*Magnetic properties, tests of (tag) cf. --014.25 and --015.25*

Mammae 134.6

Mammalia 149 -

forest injuries and protection 451

forest injuries and protection (domestic mammals) 451.1

forest injuries and protection (wild mammals) 451.2

protection against in nurseries 232.327.3

Mammoths 149.6

Man, carriage by, as method of forest transport 374.1

Man:

forest injuries by 46

influence of on vegetation 181.48

*Man, protection against (tag) --046*

Management, forest:

general, theory and principles 61

influence of form of management on logging costs 666

other questions 63

working plans, yield regulation (q.v.) 62

Management, game see Game

Management, labour 684

Management, non-wood products 651.76

Management of wilderness areas 631

Manpower in forestry and forest products industries 961

Manpower statistics 961.2

*Manuals (form tag) (035)*

*comprehensive; academic (021)*

*elementary; popular (023)*

Manures see Fertilizers

Mapping 582

from aerial photos 587.3

of vegetation 182.58

*Maps (form tag) (084.3)*

Marginal shelter, types of felling that afford 221.03

Marine borers, attack on wood 845.1

Marine works, uses of wood in 833.8

Market research in general 711



- Marketing of forest products 71 -  
 accountancy 76  
 administration of businesses 768  
 agreements, international 742.1; (private) 742.12;  
 (State, public) 742.11  
 assessment of financial results, balancing 762  
 book-keeping 763  
 budgeting, planning 767  
 business cycles in demand, consumption and supply  
 (domestic) 721.3; (international) 722.3  
 business statistics 764  
 classification of markets geographically and by  
 assortments 713  
 costs and costing 761  
 demand, consumption; supplies and stocks (in general)  
 72; (domestic, in general) 721.1; (international,  
 in general) 722.1  
 duties 742.3; (export) 742.32; (import) 742.31; (transit)  
 742.33  
 financing 766  
 history and general accounts of businesses 712  
 imports and exports in general 722.1 [see also  
 Business cycles, seasonal variations, trends,  
 duties, agreements]  
 individual markets, reviews of 717  
 influence of competition from other products 718  
 information services 741.5  
 nationalization, socialization 741.0  
 organization of demand and supply (cartels, trusts,  
 mergers etc.) 741.4; (firms, brokers etc.) 714  
 organizations, international 742.5  
 policy 74 - (domestic) 741; (international) 742  
 pricing of goods 765  
 quantitative aspects; demand, consumption and supply  
 72; (domestic markets) 721; (international) 722  
 regulation (government or private) of demand and  
 consumption 741.1  
 regulation (government or private) of prices 741.3  
 regulation (government or private) of supply 741.2  
 restrictions, international (permits, bans, quotas)  
 742.4  
 seasonal variations in demand, consumption and  
 supply (domestic) 721.2; (international) 722.2  
 subsidies 742.2  
 theory, methods, systematics 711  
 trade customs and usages 75 - (blank forms) 752;  
 (delivery, form and place of) 756; (delivery, time of)  
 755; (generalities) 751; (payment) 757; (quantities  
 and measurement) 754; (sale, methods of) 753  
 trends in demand, consumption and supply (domestic)  
 721.4; (international) 722.4  
 see also Prices
- Marking:  
 for cross-cutting 323.3  
 for felling 321  
 tools and equipment 365.1/.3  
 see also Die-hammers, Paint guns, Scribes
- Marquetry 836.4  
 Marsupialia 149.2
- Masts:  
 flagmasts 831.43  
 for boats and ships 831.48
- Match factories; match manufacture 832.3
- Materials:  
 competing with wood (marketing aspects) 718; (utili-  
 zation) 88  
 for forest engineering 381 (constructional) 381.2;  
 (explosives) 381.1
- Materials (tags) --081*  
*auxiliary --081.6*  
*differing from normal raw material only in grade or*  
*size --081.2*  
*normal raw (initial) material --081.1*  
*substitutes of different natural type --081.4*  
*substitutes of same natural type --081.3*
- Mathematical formulae, tables of (form tag) (083.3)*  
 Mathematical instruments, wood in 835  
*Mathematical methods (tag) --015*
- Mature wood 811.54  
 Maturity, economic (financial) see Exploitability, Rotation  
 Meadow soils 114.443.1  
 Mean-tree methods of determining volume 524.34
- Measurement:  
 of biomass (dry matter production) 537  
 of timber (as a forest job) 323.3; (gauges and cali-  
 pers) 365.5; (sticks, tree compasses, strings and  
 tapes) 365.7; (sticks combined with calipers) 365.8  
 of timber products 852  
 systems and units of 51 -  
 (British and American, general) 512; (metric, general)  
 511; (other, general) 513  
 see also Mensuration, Height, Diameter, Volume,  
 Linear and Area measures, Volume, Weight etc.
- Measurement (tag) [which see for subdivision] --015*
- Measuring parties, forest:  
 organization and work 524.46  
 recording of data 524.41
- Mechanical control of injurious agencies see Physical  
 and mechanical control
- Mechanical properties, wood 812.7  
 Mechanical pulping and pulp 861.11  
 Mechanical stress grading 854.212  
*Mechanical tests (tag) --015.26*
- Mechanization 307  
 Mechanized forest transport:  
 equipment 377  
 technique 375
- Medicinal plants as minor forest products 892.52  
 Medulla of woody species 811.17 see also Rays  
 Memorials 902.1  
 Mensuration, forest 5  
 Merchantable dimensions and volume 525.5  
 Mergers, marketing concerns 741.4  
 Metabiosis see Symbiosis
- Metabolism:  
 animal 131  
 plant 161
- Metal in wood 852.17
- Metals:  
 as components of atmospheric chemical influences  
 425.4  
 bonding of wood to 824.84  
 reaction of wood with 813.5
- Meteorological agencies, protection against: forest  
 injuries 42  
*Meteorological agencies, protection against: (tag) --042*

- Meteorology:  
  general 111  
  practical (methods, data, forecasts etc.) 111.0  
  see also Fire danger, forest
- Méthode du contrôle:  
  as mensurational method 562.42  
  for yield regulation 624.1
- Methyl alcohol from dry distillation of wood 867.6
- Metric system (general) 511 -  
  see also Linear and area, Volume, Weight
- Mice 149.32
- Microclimate; microclimatology 111.84
- Microfauna, soil 114.67
- Micronutrients 160.244
- Microphotographs (form tag) (084.16)*
- Microscopy (tags) --016 [which see for subdivision]*
- Migration, animal 151.21  
  animal dispersal 151.2
- Mild humus 114.356
- Military value of forests 907.8
- Mills, woodworking and their products 832 -  
  integrated mills and combinations of mills 832.8
- Mineral constituents, plant 160.21
- Mineral soil 114.36
- Mineral streak in wood 852.15
- Minerals as forest product 891
- Mining companies, forests belonging to 923.2
- Mining of leaves etc. 416.12
- Mining timber 831.2
- Minor forest products:  
  as products 89; (animal) 893; (mineral) 891; (vegetable) 892  
  growing and collection of 28  
  injurious utilization of 462
- Mist 111.75
- Mistletoe 442.1
- Mixed forest; mixed stands 228.3
- Mixed plantations, formation of 235.5  
  see also Auxiliary species, Nurses etc.
- Mixtures: choice of form and species (general) 228.0
- Mobile phones 387.1
- Mode of life:  
  animals 151  
  plants 181
- Model forests 945.25
- Modelling (growth) 612
- Models, wood in 835
- Moisture content, soil 114.122
- Moisture content, wood 812.211 -  
  equilibrium 812.213  
  fibre-saturation point 812.212  
  measures, before felling, to reduce 322.2  
  methods of measurement 812.210
- Moisture gradients 852.36
- Moisture relations:  
  plants 181.31  
  soil 114.12  
  wood 812.21
- Molecular biology 165.2
- Moles 149.36
- Mollusca 144
- Monasteries, forests belonging to 922.3
- Monkeys 149.8
- Monocotyledoneae 175.2
- Monotremata 149.1
- Mor humus 114.355
- Moraine soils 114.467
- Morphology:  
  animal 134  
  non-vascular plants 164.2  
  plant, general 164  
  vascular plants 164.3/.9
- Mortality, assessment of 572.4
- Mortality, mensurational aspects 562.22
- Mortgages see Credits
- Mortising 823.2
- Mosaics (aerial survey) 587.3
- Moss layer (ecology) 182.48
- Mosses 173.2
- Motor-cars, use of wood in 838.4
- Motor sledges 377.37
- Mould fungi, attack on wood 844.1
- Moulding of wood 827.3
- Mouldings, cutting of 823.1
- Mouldings, resin-bonded:  
  chip 862.2  
  fibre 862.3
- Mounding 232.216 -  
  as planting method 232.421  
  for site amelioration in checked plantations etc. 237.3
- Mounting of microscopical specimens (tag) --016.3*
- Movement:  
  organs of (animal) 134.7  
  physiology of (animal) 131.7; (plant) 161.8
- Mulching:  
  at time of planting out 232.425.3  
  for site amelioration in checked plantations etc. 237.3  
  in direct sowings 232.332  
  in nurseries 232.325.3
- Mules, transport by 374.3
- Mull humus 114.356
- Multiple land use 916
- Municipal forests 922.2
- Musci 173.2
- Museums 945.17
- Mushrooms 289.1  
  as a non-wood forest product 894.2
- Musical instruments, use of wood in 835
- Muskrats 149.32
- Mustelidae 149.74
- Mutations (plant breeding by) 165.43
- Mycology 172.8
- Mycoplasma 443.4
- Mycorrhiza (organs of nutrition) 164.3; (symbiosis) 181.351
- Myriapoda 145.6
- Myxomycetes 172.4
- Myxothallophyta 172.4

## N

- Nail- and screw-holding capacity, wood 812.791
- Nailed joints 824.1
- Nails, wooden 835
- National aspects, general (tag) --090*
- National economy, forests and forestry in 9
- National forests 922.1
- National parks 907.11

- Nationalization (socialization):
    - of forest products industries 794.2
    - of forests 921
    - of marketing 741.0
    - of transport 784.2
  - Natural control of injurious agencies 411
  - Natural durability of wood 814.1
  - Natural forest; natural stands 228.8 -
    - “second-growth” 228.82
    - virgin 228.81
  - Natural pruning 181.63
    - influence on wood structure and properties 815.4
  - Natural succession 182.21
    - “afforestation” by 234
  - Nature conservation:
    - law 931.2
    - value of 652.57
  - Nature trails 907.15
  - Needles, morphology 164.5
  - Nematodes 145.1:
    - damage by 454
  - Nervous system:
    - anatomy etc. 134.8
    - physiology 131.8
  - Networks, computer (planning and organizing) 685.4
  - News bulletins (form tag) (055)*
  - Newspaper articles (form tag) (046)*
  - Newspapers (form tag) (054)*
  - Nitrification, soil 114.61
  - Nitrogen:
    - and compounds in soil 114.261
    - cycle, biological aspects 114.61
  - Nitrogen fertilizers (nursery) 232.322.411
  - Nomenclature (tags) --011*
    - scientific --011.1*
    - trade --011.3*
    - vernacular, popular --011.2*
  - Nomograms (form tag) (083.57)*
  - Non-wood products:
    - husbandry (growing) 289
    - management 651.76
    - value of 655
  - “Normal” forest 611
  - Normative documents (form tag) (083)*
  - “Nosing” of logs for skidding 323.7
  - Notch planting 232.421
  - Notices (form tags) (047)*
    - press reports (047.5)*
    - short press notices etc. (047.6)*
  - Numerical tables (as form tag) (083.5)*
  - Nurseries 232.320
  - Nurseries and nursery practice 232.32
    - see also Cultivation, Fertilizing, Sowing etc.
  - Nursery beds, formation of 232.322.6
  - Nursery rotations 232.322.1
  - Nursery sites 232.321
  - Nurses 235.4 -
    - interplanting for site amelioration 237.52
    - shrub etc. 235.42
    - tree 235.41
  - Nutrient deficiencies, plant 424.7
  - Nutrient requirements, plant 181.341
  - Nutrient uptake of plants:
    - ecological aspects 181.3
    - pure physiology 161.11
  - Nutrients in soil 114.52
  - Nutrients, plant chemistry 160.24
  - Nutrition, animal:
    - ecological aspects 151.3
    - organs of 134.3
    - physiology 131.3
  - Nutrition, plant:
    - ecological aspects 181.3
    - organs of 164.3
    - physiology 161.3
  - Nuts:
    - as minor forest products 892.72
    - growing and collection 283.2
- O**
- Obituary notices 902.1
  - Objects of management 611
    - determination from business point of view 654
  - Ocular estimation of stand volume etc. 524.38
  - Odour, wood 813.7
  - Office organization, forest 683
  - Oils, essential:
    - as minor forest product 892.62
    - from wood 866.1
  - Oils, fixed:
    - as minor forest product 892.63
    - from wood 866.2
  - Oils from dry distillation of wood 867.8
  - Old wood 814.7
  - Ontogeny, animal 133
  - Onychophora 145.5
  - Open (excessively open) stands, treatment 25
  - Optical phenomena, atmospheric 111.93
  - Optical properties, wood 812.11
  - Optical tests (tags) cf. --014.21 and --015.21*
  - Orations (form tag) (042.5)*
  - Organic components of chemical influences 425.13
  - Organic constituents, plant:
    - general 160.22
    - wood 813.1/.2 - (cell wall) 813.1; (other) 813.2
  - Organic constituents, soil 114.27
  - Organic manures (except composts) 232.322.43
    - see Fertilizers
  - Organizational documents (form tag) (06)*
  - Organizations, history of 902.2
  - Organography; organology:
    - animal 134
    - plant 164
  - Orientation 151.21
  - Oriented strand board 862.2
  - Ornamental trees 273
  - Ornamental trees and branches, as minor forest products 892.51
  - Ornaments, wooden 836.5
  - Ornithology 148.2
  - Ortstein see Pans, soil
  - Osiers:
    - as forest products 892.82
    - growing and harvesting 286
  - Overhead lines, transport by 375.12
  - Overhead release 243
  - Owners' organizations, forest:
    - international 972.3
    - other 967

Ownership and ownership policy, forest 92  
 common ownership (private) 924  
 "community" (municipal etc.) ownership 922.2  
 consolidation of holdings 928  
 generalities, history, principles 920  
 private ownership 923  
 protection of (property issues) 933  
 public ownership 922  
 public versus private; socialization, nationalization 921  
 State ownership 922.1  
 see also Economics, Marketing  
*Ownership (tags) --092*  
*common --092.4*  
*private --092.3*  
*public --092.2*  
*public versus private --092.1*  
 Oxen, transport by 374.4

## P

Packing containers, use of wood in 834.4  
 Packing of planting stock 232.412.4  
*Packing (tag) --084.3*  
 Paint guns for marking trees and logs 365.1  
 Painting of wood 829.18  
 Palaeoclimatology 111.83  
 Palaeobotany 182.1  
 Palaeoecology, plant 182.1  
 Paling, wood 831.51  
 Pallets 834.6  
*Pamphlets (form tag) (041)*  
 Pans, skidding 377.31  
 Pans, soil:  
 below surface 114.362  
 surface 114.361  
 Papermaking; paper and cardboard 861.2  
 mill lay-out, power, machinery etc. 861.20  
 types of paper, cardboard etc. 861.28  
 see also Pulping and pulp  
 Parallam 832.288  
 Parallel strand lumber (PSL) 832.288  
 Parasites of animals 151.42  
 Parasitic phanerogams, forest injuries and protection  
 442.1  
 Parasitism:  
 as mode of animal nutrition 151.352  
 as mode of plant nutrition 181.352  
 Parenchyma (cytology and histology) 168  
 wood structure 811.164  
 Parent material of soils 114.32  
 Parks 272  
 national 907.11  
 Participatory planning 624.6  
 Pastoral husbandry:  
 relation of forests and forestry to 908.1 [see *preferably* Land use]  
 studies of effects on hydrological and erosion factors  
 116.26  
 Pastured forests 268.1  
 Pastured land, erosion control on 116.61  
 Pastures:  
 control and organization of grazing 268.6  
 control of animal pests 268.43  
 eradication of undesirable plants 268.44  
 forage plants 268.3  
 forage types and yields 268.5  
 forest 268.1  
 maintenance and improvement 268.4  
 open 268.2  
 Patch sowing (direct) 232.331  
*Patents (form tag) (088.8)*  
 Pathology:  
 animal 132  
 plant 162  
 see *preferably* Fungus diseases etc.  
 Paths, inspection:  
 in regeneration or young plantations 236.4  
 planning 686.34  
 Patterns, wooden 835  
 Pavements, wooden 833.7  
 Payment for forest products, customs and usages 757  
 Peat:  
 as minor forest product 891  
 soils (peatland forestry) 232.23; (soil type) 114.444  
 Peavies 364.1  
 Peccaries 149.73  
 Pectin as wood constituent 813.17  
 Peculiarities of forestry:  
 as regards business economics 642  
 as regards social economics 901  
 Peeler logs 832.20  
 Peeling:  
 of bark see Barking  
 of wood, processes 826.1  
 Pelts 156.42  
 Pentosans as wood constituents 813.15  
 Percent:  
 indicating 651.3  
 mean annual forest 651.4  
*Percentage tables (form tag) (083.53)*  
 Perforation plates (of wood vessels) 811.141  
 Performance studies see Work performance  
*Periodicals (form tag) (05):*  
*appearing more than once annually (052/054)*  
*in the strict sense (051)*  
 see also *Annuals, Yearbooks*  
 Permanent-sample-plot methods 565  
 Permeability, soil 114.123  
 Permeability, wood 812.23  
 to other liquids 812.235  
 to vapours and gases 812.237  
 to water and aqueous solutions 812.231  
 Permits, international trade 742.4  
 Persistence of branches 181.63  
 Pest management, integrated 415.1  
 Pesticides 414.12  
 pH, soil 114.25  
 effect on nutrient uptake 181.342  
 Phanerogams 174  
 Phenology 181.8  
 Phenols from dry distillation of wood 867.6  
 Phloem 168  
 elements of, in wood 811.28; (as defect) 852.13;  
 (included) 811.281; (internal) 811.282  
 of woody species 811.7; (dilatation) 811.73; (primary)  
 811.71; (secondary) 811.72  
 Phosphate fertilizers (nursery) 232.322.412  
 Phosphorus and compounds in soil 114.262  
 Photogrammetry see Aerial photography  
*Photographs (form tag) (084.121)*  
 Photooxidants 425.13

Photoperiodic behaviour 181.212  
 Photosynthesis 161.32  
 Phylogeny:  
   animal 135  
   plant 165.1  
 Physical analysis, soil 114.15  
 Physical and mechanical control of forest injuries 413 -  
   direct destruction by heat, fire etc. 413.3  
   direct destruction of agent by shooting, picking  
     removal of plant or affected part 413.2  
   impedance by barriers, screens, guards 413.5  
   repulsion by physical or mechanical means; scaring  
     413.4  
   trapping, with simultaneous or subsequent destructi-  
     on 413.1  
 Physical properties:  
   soil 114.1  
   wood 812  
 Physical soil relations of plants 181.33  
*Physical tests (tags) cf. --014.2 and --015.2*  
 Physico-chemical properties, soil 114.22  
*Physico-chemical tests (tags) cf. --014.28 and --015.28*  
 Physiological variation in plants 165.53  
 Physiology, general:  
   animal 131  
   human work 302  
   plant 161  
 Physiology of cells (plant) 161.7  
 Physiology of development and growth:  
   animal 131.3  
   plant 161.4  
 Physiology of movement:  
   animal 131.7  
   plant 161.8  
 Physiology of reproduction:  
   animal 131.6  
   plant 161.6 [*Cf also 165; 181.5*]  
 Phytosanitary inspections 410  
 Phytosarcodina 172.4  
 Phytotron 232.329.4  
 Pickaroons 364.2  
 Picking sticks 835  
 Picture rails 833.155  
*Pictures (form tag) (084.1)*  
 Piece rates, performance data for fixing:  
   general 305  
   in felling and related operations 353  
 Piers, decking for 833.5  
 Pigs 149.73  
 Piles 831.3  
 Pioneer crops 235.2  
 Pisces 147  
 Pit planting 232.421  
 Pitch pockets and seams in wood 852.14  
 Pith:  
   flecks in wood (anatomy) 811.27; (as defect) 852.13  
   of woody species 811.17  
 Pitprops 831.2  
 Pits (in wood elements) 811.126  
 Pitsawing 323.8  
 Pitsaws 362.5  
 Placental mammals 149.3/8  
 Planed wood in general 832.182  
 Planing 823.1  
 Planks, builders' rough 833.11  
 Planning: business, financial see Economics, Marketing  
 Planning: forest management 62  
   of growing stock 624.2  
   of particular (silvicultural) measures 624.3  
   to minimize forest injuries 624.4  
 Planning, logging operations 311  
 Planning, participatory 624.6  
 Planning: regional land use 911  
 Plans and planning see *also* Working plans,  
   Telecommunications, Buildings, Transport  
*Plans and planning (tag) --062*  
*Plans (form tags):*  
   (*maps*) (084.3)  
   (*projects*) (083.9)  
 Plant analysis 160.2 -  
   bark 160.202  
   foliage 160.201  
   roots etc. 160.203  
   wood 160.204  
 Plant communities, ecology 182.8  
 Plant communities, soil fertility 114.521.7  
 Plant, competition 181.41  
 Plant rearing see Nursery practice  
 Plant, resistance  
   to biotic influences and fire 181.4  
   to drought 181.31  
 Plant sanctuaries 907.12  
 "Plantation crops":  
   growing and collection 28  
   products 892  
 Plantations, forest 228.7  
   care of in initial stages 236  
   checked, treatment of 237  
   failed or partially failed, treatment of 236.6  
 Planting 232.4 -  
   advance 235.2  
   ball 232.429  
   bunch 232.429  
   care in 232.424  
   depth of 232.423  
   mechanical 232.427  
   methods 232.42  
   mound 232.421  
   notch 232.421  
   pit 232.421  
   position of plant 232.422  
   repair 236.5  
   season and time 232.44  
   slant 232.422  
   tools 232.427  
 Planting stock 232.41 -  
   acquisition 232.411.1  
   age and type 232.411.2  
   burying 232.412.3  
   certification 232.411.1  
   cold storage 232.412.7  
   exposure 232.412.4  
   grading 232.411.3  
   handling and treatment 232.412  
   heeling in 232.412.3  
   kind of 232.411  
   legislation for certification 232.411.1  
   lifting 232.412.1  
   lifting, early 232.412.4  
   natural forest (wilding) 232.411.6

- origin 232.411.1
- packing 232.412.4
- produced by different nursery treatments 232.411.5
- protective dressings for 232.412.6
- provided by State free or at low cost 941
- puddling 232.412.5
- raising in pots or tubes 232.329.6
- root dressings 232.412.6
- root pruning 232.412.2
- shoot pruning 232.412.2
- size 232.411.3
- sources 232.411
- stumping 232.412.2
- trade 232.411.1
- transport 232.412.4
- Plasmodroma 143
- Plasticity, wood 812.702
- Plastics 865 -
  - use of lignin in 865.2
  - use of waste wood in 865.1
- Ploughing:
  - for site amelioration in checked plantations etc. 237.1
  - of plantation sites before planting 232.216
- Plus trees 165.62
- Plywood 832.282 *see also* Veneer and plywood
- Pockets:
  - bark 852.13
  - pitch 852.14
- Podzolic soils, grey-brown 114.441.4
- Podzols 114.441.2
- Point sampling:
  - measurement 521.62
  - survey 524.63
- Poisoning:
  - ground vegetation (in nurseries) 232.325.24; (to prepare artificial regeneration) 232.214; (to prepare for natural regeneration) 231.324
  - undesirable trees 243.8
- Poisoning *see also* Chemical control, Herbicides, Weeds
- Poisonous soil constituents, injuries due to 424.5
- Poisonous woods 813.8
- Polemics (form tag) (049.2)*
- Poles 831.4
  - flagmasts 831.43
  - masts for boats and ships 831.48
  - scaffolding 831.45
  - telegraph and power-transmission 831.41
- Policy:
  - afforestation 913/914
  - forest 903; (international) 97; (regarding labour) 96; (regarding ownership) 92
  - forest products industries 794
  - game and hunting 156.6
  - land-use 91
  - marketing; trade 74
  - public participation in 903.1
  - timber-growing outside the forest 915
  - transport 784
- Policy (tags): general --090.3*
- labour --096*
- Polishing, wood 829.16
- Pollarding systems 222.3
- Pollen analysis 182.1 *see also* Palaeoecology
- Pollen:
  - dispersion 181.526
  - morphology 164.6
  - viability 181.526
- Pollination 181.521
- Polluted water, effects of forestry practices 116.28
- Pollution, general 425
- Polyploidy:
  - in plants 165.42; (induced) 165.43
- Polyuronides as wood constituents 813.17
- Popular works; popular manuals (form tag) (023)*
- Population cycles and fluctuations (animal) 153 -
  - control 153.4
  - irregular 153.2
  - other 153.3
  - regular 153.1
- Porches 833.17
- Porcupines 149.32
- Porosity, soil 114.123
- "Portable" saw-mills 832.16
- Ports, harbours 788
  - customs and usages 788.2
  - general descriptions of 788.1
  - loading and unloading in 788.3
  - stevedoring 788.3
  - storage in 788.4
- Post-seedling development and form 181.6
- Posters, pictorial (form tag) (084.5)*
- Posts 831.51
- Potassium and its compounds in soil 114.264
- Potassium fertilizers (nursery) 232.322.414
- Pots, raising plants in 232.329.6
- Power saws *see* Saws and sawing
- Power (tag) --081.7*
- Practical training 945.33
  - in work science and efficiency 303
- Practical training documents (form tag) (076)*
- Prairie soils 114.441.6
- Precipitation 111.77
  - classification 111.771
  - distribution at earth's surface 111.772
  - effects of vegetation on 116.1
  - forest injuries and protection 423; (in nurseries) 232.327.11
  - formation and dissolution 111.771
  - particular kinds of 111.78
  - reaction of plants to 181.24
  - structure 111.771
  - variations in 111.773
  - see also* Rain, Snow etc.
- Precommercial thinning(s) 241
- Predators 151.41
- Prefabricated houses 832.481
- Prefabricated products (tag) --088.3*
- Pregnancy, physiology of animal 131.6
- "Pre-logging" 322.6
- Prescriptions (form tag) (083.1)*
- Presentations (form tag) (042.5)*
- Preservation, wood 841 -
  - particular categories (assortments) of wood 841.3
  - processes 841.2 - (after-treatment, e.g. of standing poles) 841.26; (impregnation of the living tree) [Cf. also 322.4] 841.28; (non-pressure) 841.25; (pressure) 841.21

- Preservative-treated wood, durability 841.4  
 laboratory tests 841.41  
 small-scale ("graveyard" etc.) tests 841.42  
 under service conditions 841.43
- Preservatives, wood 841.1 -  
 aqueous solutions 841.12  
 creosote, tar etc. 841.11  
 effect on gluing 824.88  
 solutions in other liquids 841.13  
 toxicity 841.14
- Press cuttings (form tag) (047.6)*  
*Press reports; press notices (form tag) (047.5)*
- Pressure, atmospheric 111.4
- Pre-treatment, seed 232.315.3
- Prices of forest products 73  
 business cycles in 734  
 generalities, theory etc. 731  
 influence on forestry as a business 644.7  
 price levels of different regions 732  
 price structure in relation to species and assortments  
 737  
 regulation of prices 741.3  
 seasonal variations 733  
 trends 735
- Pricing:  
 in marketing 765  
 in the forest products industries 796.5
- Primary conversion of wood (in the forest) 323
- Primates 149.8
- Printers' blocks, use of wood for 835
- Private enterprise, measures promoting (tag) --094*
- Private forestry, measures affecting see Public supervision and control of forestry, Publicity, Credits, Subsidies etc.
- Private forests 923  
 ecclesiastical 922.3  
 of industries, mining and communications companies  
 etc. 923.2  
 other, large 923.3  
 small, e.g. farm forests 923.4
- Prizes, forestry 945.26
- Proceedings (form tag) (063)*
- Processing, seed 232.312.4
- Processing (tags):*  
*accessory and final --084*  
*main phase --083*  
*preparatory --082*  
*regulation of conditions during --086*
- Processors 360
- Proclimaxes 182.22
- Products and their uses (tags) --088*  
*competitive --088.4*  
*crude, semi-manufactured, intermediate --088.1*  
*fully manufactured, finished --088.2*  
*prefabricated --088.3*  
*wastes and by-products --088.6*  
*yield per unit of raw material --088.5*
- Products, forest 8 -  
 minor 89
- Profile, soil see Soil profile
- Profit see Economics, Costs
- Progress reports (form tag) (047.1)*
- Progressive yield, as principle of management 611
- Projects; plans (form tag) (083.9)*
- Propaganda, forestry and forest products 945.2 - (literary) 945.21 see also Films, Radio
- Propaganda (tag) --094.5*
- Propagation see Sowing, Vegetative propagation etc.
- Property issues see Protection of ownership
- Prospectuses, industrial and commercial (form tag) (085)*
- Protected animals 907.13  
 see also Game
- Protected trees 907.12
- Protection:  
 forest 4 - (general technique) 41; (public supervision and control) 935.4  
 of forest ownership 933  
 of game and hunting 156.2  
 [see also the various agencies concerned, e.g. Fungus, Insect]
- Protection forest 223  
 provision for; safeguarding of 934  
 utility of 907.32  
 working plans for 627.1
- Protection of the environment 907.33
- Protection (tags) --04*  
*against (animals) --045*  
*(fire) --043*  
*(man) --046*  
*(meteorological and chemical agencies) --042*  
*(plant organisms) --044*
- Protective devices of animals 151.7
- Protective works:  
 against avalanches, etc. 384.1 [See also 116.123.13]  
 against erosion 384.2  
 stream-training works 386  
 torrent training 384.3
- Protein manufacture from wood hydrolysates 863.5
- Protostomata 144
- Protozoa 143
- Protracheata 145.5
- Provenance trials 232.12
- Pruning 245.1  
 "brashing" 245.11  
 bud 245.14  
 costs and profitability 651.73  
 dry 245.12  
 green 245.13  
 influence on wood structure and properties 815.4  
 natural 181.63  
 tools and equipment 245.17  
 see also Planting stock, Root pruning
- Psychology:  
 and human work 302  
 animal 151.6
- Pteridophyta 173.5
- Public assistance to forestry 94 -  
 subsidies; provision of land, seed, planting stock etc.  
 free or at low cost 941  
 see also Credits, Advisory services etc
- Public assistance to private enterprise (tag) --094*
- Public buildings, uses of wood in 833.2
- Public forests 922
- Public participation in policy 903.1
- Public records (form tag) (093.2)*

Public supervision and control of forestry 93 -  
 as protection against poor management 935.1  
 generalities 931.1  
 laws, general forest 931.1  
 protection forest 934  
 protection of ownership (property issues) 933  
 regarding forest improvements 935.2  
 regarding forest protection 935.4  
 regarding forest rights 935.5  
 regarding leases and licences 935.6  
 regarding regeneration and sustained yield 935.1  
*see also* Economics, Marketing  
*Public supervision and control (tag) --093*  
*Publications (form tag)*  
*from common-interest groups (069)*  
*non-governmental bodies (062)*  
 Publicity, forestry and forest products 945.2  
*Publicity (tag) --094.5*  
 Puddling (planting stock) 232.412.5  
 Pulping and pulp 861.1  
 bleaching and other after-treatment of pulp 861.17  
 mill lay-out, power, machinery etc. 861.10  
 pulping processes and resulting pulps (mechanical)  
 861.11; (other) 861.16; (semichemical) 861.12;  
 (semichemical and chemical, general) 861.12/.16;  
 (soda) 861.13; (sulphate) 861.14; (sulphite) 861.15;  
 raw materials, pulpwood and chips 861.0  
 trade classification of pulps 861.18  
 waste-liquor utilization 861.19  
*see also* Lignin  
 Pulpwood 861.0  
 Purchase, forest valuation for 652.51  
 Pure forest; pure stands 228.2  
 Pyrolysis *see* Distillation

## Q

Quadrats 182.52  
 Quality control:  
 sawmills and planing mills 832.12  
 veneer and plywood mills 832.22  
 Quality increment 561.5  
 Quality:  
 seed 232.318  
 site, assessment *see* Site quality  
 timber 851 *see also* Grading  
 wood 851  
 Quantitative genetics 165.45  
 Quarter-girth measurement 516.25  
 Quarter sawing 822.1  
*Questionnaires (form tag) (049.5)*  
 Quotas, international trade 742.4

## R

Rabbits 149.32  
 Races, trials of 232.12  
 Racks for small wood: sledges with 377.33  
 Racoons 149.74  
 Radiant heat:  
 gluing by 824.876  
 seasoning by 847.5  
 Radiation 111.21 -  
 absorption in atmosphere 111.213  
 of special wavelengths 111.216  
 scattering in atmosphere 111.213  
 snow 116.121.33

solar 111.211  
 terrestrial 111.212  
 transmission in atmosphere 111.213  
 Radiators, use of wood 833.153  
 Radio communications in forestry:  
 engineering aspects 387  
 planning and organization 685.2  
*Radio communications (tag) --065.2*  
 Radio talks 945.23  
 Radioactivity 426.4  
 Rafting 378.33 -  
 bundling for 378.2  
 by sea 378.35  
 combined with floating 378.32  
 on inland waters 378.34  
 Railway rolling stock: use of wood in 838.2  
 Railways:  
 erosion along 116.5  
 growing lines or strips of trees along 265  
 reduction of forest fire risk 432.11  
 Railways, forest:  
 equipment etc. 377.7  
 locomotives 377.73  
 rolling stock 377.72  
 track 377.71  
 transport by 375.7  
 Railways, public: transport by 375.8  
 Rain 111.781  
 forest injuries and protection 423.1; (in nurseries)  
 232.327.11  
 interception 116.11  
 mixed with snow 111.783  
 Range, natural:  
 animals 151.1/.2  
 plants 181.1  
 Ranges (grazing) *see* Forage, Grazing, Pastures  
 Rationalization *see* Work  
 Rats 149.32  
 Raw humus 114.355  
 Ray tracheids, wood 811.153  
 Rayon 861.4  
 Rays, wood 811.161  
 Reaction, soil 114.25  
 Reaction wood:  
 anatomy 811.22  
 as defect 852.16  
*Ready reckoners (form tag):*  
*numeric tables (083.53)*  
*technical (083.5)*  
*Recipes (form tag) (083.1)*  
 Reciprocating saws and sawing:  
 frame 822.32  
 other 822.31  
 Reconnaissance:  
 visual, in aerial surveys 588  
 working-plan 621  
*Recovery per unit of raw material (tag) --088.5*  
 Recovery studies:  
 sawmilling 832.15  
 veneer and plywood manufacture 832.25  
 Recreation:  
 damage to tree growth by 468  
 forest valuation 652.56  
 influence of 181.48  
 utility of forests for 907.2



Recreational forests, working plans for 627.3  
 Recreational goods, uses of wood in 835  
 Recruitment as factor in increment 562.23  
 Red desert soils 114.442.7  
 Red earths 114.441.7  
 Reeds and rushes, as minor forest products 892.84  
*Reference books (form tags) see Books, Dictionaries, Directories, Encyclopaedias, Handbooks etc.*  
*References, lists of (form tag) (048.1)*  
 Reforestation *see* Afforestation, Regeneration  
 Reform, land 921  
 Regeneration 23 -  
   costs and profitability of different methods 651.72  
   forms of 230 - (by groups) 230.2; (by strips) 230.3;  
   (over large areas) 230.1  
   public supervision and control 935.1  
 Regeneration, artificial 232  
   combined with agriculture 232.22 [*Cf. also* 261]  
   site preparation for 232.21  
   surveys 236.4  
   *see also* Nursery practice, Planting, Sowing etc.  
 Regeneration, natural 231 -  
   from advance growth 231.1  
   preparatory measures 231.3  
 Regional accounts: forests and forestry 904  
*Regional accounts (tag) --090.4*  
 Regional floras (vascular plant taxonomy) 174 for particular groups of cryptogams *see* the group concerned [with geographical number]  
 Regional planning, land-use 911  
*Registers (form tag) (083.2)*  
 Regulation, forest *see* Management, forest; Yield regulation etc.  
 Regulation, public:  
   of forestry *see* Public supervision and control  
   of trade, transport etc. *see* Economics, Marketing  
 Relascope 521.62  
 Religion, the forest in 907.6  
 Religious foundations, forests belonging to 922.3  
 Re-logging 332.1  
 Remanufacturing 835/836  
 Remote sensing 585  
 Rendzinas 114.446.1  
 Rental:  
   forest 651.2  
   soil 651.2  
 Repair planting 236.5  
 Repellents (forest protection):  
   chemical 414.14  
   physical/mechanical 413.4  
*Reports (form tags) (047)*  
   *for the press (047.5)*  
   *of expeditions and travels (079.3)*  
   *progress reports; annual reports (047.1)*  
   *special reports (047.3)*  
*Reprints (form tags) (041)*  
 Reproduction, animal:  
   cytogenetics 135  
   ecological aspects 151.5  
   physiology 131.6  
 Reproduction, plant:  
   cytogenetics 165  
   ecological aspects 181.5; (sexual reproduction) 181.52; (vegetative reproduction) 181.51  
   physiology 161.6  
   *see also* Regeneration  
 Reproductive behaviour:  
   animals 151.5  
   plants 181.5  
 Reproductive organs, morphology:  
   animals 134.6  
   flowering plants 164.6  
   lower plants 164.2  
 Reptilia 148.1  
 Re-saws and re-sawing 822.45  
 Research, forestry and forest products (policy, organization etc.) 945.4  
*Research (tag) -01; (technique, general) --010*  
 Reservation, forest 921  
 Reserve materials:  
   animal 131.3  
   plant 161.34  
 Reserves, financial:  
   financing out of 676.2  
   in forest enterprises 672.3  
 Reserves, high forest with 221.51  
 Reserves, nature, game *see* Game, Sanctuaries  
 Reserves, timber; as factor in forest management 618  
 Residential buildings, uses of wood in 833.2  
 Resin:  
   as forest product 892.61  
   crops, growing and collection 284.1  
   from wood 866.1  
   pockets and streaks in wood 852.14  
 Resistance, plant:  
   to biotic influences and fire 181.4  
   to drought 181.31  
 Resorption of degenerated parts (in plants) 161.36  
 Resources, forest *see* Statistics and resources  
*Resources (tag) --090.5*  
 Respacing, cleanings 241  
   young crops 236.2  
 Respiration, physiology of:  
   animal 131.2  
   plant 161.2  
 Respiratory system, animal (morphology etc.) 134.2  
*Results of tests (tag). --018*  
 Returns, financial: in forestry *see* Economics, Costs  
*Returns, financial (tag) --064*  
 Revegetation:  
   burnt areas 434  
   pastures 268.41  
   *see also* Erosion  
*Reviews (form tag) (048.1)*  
 Revision of working plans 626  
 Rhinoceroses 149.72  
 Rides, forest 686.33  
 Rights, forest 935.5; (servitudes) etc. 644.9  
*Rights (tag) --093*  
 Rime 111.744.2  
   forest injuries and protection 423.2  
 Rings, annual *see* Growth rings  
 Rip-saws and rip-sawing *see* Saws and sawing "Rissers" 365.2  
 River works, uses of wood in 833.8  
 Road closures, snow and avalanche 116.123.23  
 Road-making compounds, lignin in 864.5  
 Roads:  
   construction damage 463  
   erosion along 116.5  
   erosion control 116.65  
   use of wood in 833.7

Roads, forest:  
costs (permanent roads) 663.26; (temporary roads) 663.25  
general planning of road network 686.3 - (extraction lanes, rides etc.) 686.33; (inspection paths) 686.34; (permanent roads) 686.31; (temporary roads) 686.32  
technical planning; types of road; construction and maintenance 383 - (earth roads, mixed road surfaces) 383.6; (grading) 383.3; (machines and equipment) 383.7; (permanent roads) 383.1; (road surfaces and their maintenance) 383.4; (temporary, including snow and ice, roads) 383.2

Roads (tag) --066

Roadside trees:  
ornamental 273  
timber trees in strips or lines 265; (policy regarding) 915

Rodentia 149.32

Rollers, wooden 835

Rolling of seedbeds 232.323.6

Roofs:

shingles for 834.1  
use of wood in 833.13

Root cuttings, propagation by 232.328.2

Root dressings for planting stock 232.412.6

Root pruning:

in the nursery 232.326.1  
of planting stock 232.412.2

Root suckers:

natural forest regeneration from 231.5  
propagation by 232.328.3  
reproduction by (ecology) 181.51

Root swelling:

effect on diameter measurements 521.26  
form 524.15

Roots:

development and ecological relations 181.36  
injuries to 416.3  
morphology 164.3

Rootwood, structure and properties 815.34

Rot see Fungus attack

Rotations:

forest 613; (financial calculations) 651.5  
nursery 232.322.1

Rubber:

as minor forest product 892.66  
crops, growing and collection 284.3

Run-off, studies of 116.2 -

effects of (cropping practices) 116.27; (forestry practices) 116.28; (meteorological factors) 116.21;  
(pastoral use) 116.26; (soil and geology) 116.24;  
(topography) 116.23; (vegetation) 116.25

Rural amenity, value of forest in 907.1

## S

Saccharification of wood 863 -

processes 863.1  
products (wood sugar and alcohol) 863.4; (wood sugar for cattle fodder) 863.6; (yeast and protein) 863.5

Safety, work 304

Sale:

forest products: customs and usages 75 - (methods, e.g. auction, tender) 753; (payment) 757; (place and form of delivery) 756; (time of delivery) 755

forest valuation for 652.51

Saline soils 114.445.1

Salt injuries 424.4

Salt spray, injuries to trees 425.2

see also Sea wind

Salts, protective action in plants 160.28

Salvage fellings 334

Salvage:

fire-damaged timber 433  
overgrown stock in nurseries 232.326  
stranded timber 378.42  
sunken timber 378.45

Sample-plot technique (permanent plots for increment studies etc.) 565 [for volume determination see Volume of stands]

Sample plots in enumeration surveys see Sampling; Surveys, enumeration

Sample tree 572

Samples (tags) -013 -

built-up assemblies as --013.8

collection, selection --013.1

preparation --013.2

preservation in collections etc. --013.4

use of medium-scale --013.6

use of service-scale --013.7

use of small --013.5

Sampling design 571

Sampling methods in enumeration surveys 524.63 -

accuracy, reliability 524.637  
intensity, % of area sampled 524.631

units, plots (arrangement, shape and size) 524.63;  
(shape) 524.635; (size) 524.636

see also Statistical design and evaluation; Surveys, enumeration

Sampling, selection criteria 571

Sanctuaries:

plant and tree 907.12

water 907.14

see also Game

Sand fixation 116.82

Sanding of wood 829.13

"Sandwich materials", wood in 832.284

Sandy soils 114.462

Sap flow 161.12

Sap-staining fungi, attack on wood 844.1

Sap sugar:

as minor forest product 892.68  
crops, growing and harvesting 284.4

Sapwood 811.51

Satellite images for aerial surveys 585

Satellite imaging 587

Sawdust:

as fuel 839.811

other uses 839.83

Sawdust/magnesite flooring 862.4

Sawlogs 832.10

Sawmills and planing mills 832.1 -

lay-out planning; power; machinery in general 832.11  
mill operation (including quality control) 832.12

mobile ("portable") mills 832.16

- output per unit (recovery and waste) and factors affecting it 832.15
- products 832.18; (planed) 832.182; (sawn) 832.181
- rationalization (general); organization of labour 832.14
- transport and sorting within the mill 832.13
- Saws and sawing in sawmilling and woodworking 822 -
  - blades and their maintenance 822.8
  - hand 822.2
  - methods of breaking down logs (quartering, flat sawing etc.) 822.1
  - power, classified by constructional type 822.3; (band) 822.34; (circular) 822.33; (frame) 822.32; (other reciprocating types) 822.31
  - power, classified by functions 822.4; (edgers and rip-saws) 822.46; (log cross-cutters) 822.41; (other cross-cutters) 822.42; (re-saws) 822.45
- Saws and sawing in the forest 362 -
  - bow-saws (one- or two-man) 362.2
  - cross-cut saws (one-man) 362.3; (two-man) 362.4
  - general; theory of sawing, saw teeth 362.0
  - maintenance of saws 362.8
  - one-man saws in general 362.1
  - pitsaws, ripsaws 362.5
  - power saws 362.7
  - use of saws (felling with hand saws) 323.11; (felling with power saws) 323.12; (in cross-cutting) 323.4; (pitsawing) 323.8
- Scaffolding 831.45
- Scaling 526
  - by formula 526.5; (based on butt diameter) 526.53; (based on mid-diameter or mean of top and butt) 526.52; (based on top diameter) 526.51; (measurement by sections) 526.54
  - by log rules 526.6
  - by water displacement 526.2
  - by weight 526.1
  - conversion from one method to another 526.7
- Scaring of pests 413.4
- Scattered holdings, consolidation of 928
- Schizomycetes, Schizophyceae, Schizophyta 172.3
- School books (form tag) (075)*
- Scientific instruments, use of wood in 835
- Scraping of undergrowth and ground vegetation preparatory to natural regeneration 231.32
- Screens, guards etc. against pests 413.5
  - see also Fencing
- Screwed joints 824.2
- Screws, wooden 835
- Scribes, bark 865.2
- Sea wind, reaction of plants to 181.231
  - see also Salt spray
- Seaside planting: trees for 273.1
- Season:
  - felling 322.1
  - lining out 232.324.4
  - planting 232.44
  - sowing 232.335
- Seasonal aspects of vegetation types 182.28
- Seasoning 847
  - see also Air drying, Kiln drying etc
- Seasoning defects:
  - classification etc. of 852.3
  - correction of 847.8
  - see also Warping, Case-hardening etc.
- Second-growth forest; second-growth stands 228.82
- Secondary forests 228.82
- Secondary wood products 835/836
- Secretion:
  - animal 131.4
  - plant 161.35
- Secretary elements:
  - in plants (general) 168
  - in wood 811.24
- Sectional area at positions other than breast height 521.7 [at breast height see Basal area]
- Security, forest as 942.7
- Sedimentation ("warping"), technique of 385.3
- Seed 232.31 -
  - as minor forest product 892.72
  - certification 232.314
  - collection 232.312.1
  - covering (in direct sowings) 232.334; (in nursery) 232.323.5
  - crops 283; (forest seed) 232.311.1; (minor forest products, growing and collection of) 283.3
  - disinfection; disinfestation 232.315.1
  - dispersal 181.523
  - dormancy 181.524; (treatments to overcome) 232.315.3
  - dressings (protective) 232.315.4
  - extraction 232.312.2
  - fumigation 232.315.1
  - germination 181.525; (tests) 232.318
  - grading 232.312.3
  - longevity 181.524
  - morphology 164.8
  - pelleting 232.315.4
  - pre-treatment 232.315.3
  - production 232.311; (from dwarf grafts etc.) 232.311.3; (from elite trees and stands) 232.311.2; (from "seed orchards") 232.311.3; (methods of inducing) 232.311.3
  - provided free or at low cost by State 941
  - purchase 232.314
  - quality 232.318; (in direct sowings) 232.333; (in nursery sowings) 232.323.2
  - storage 232.315.2
  - testing 232.318
  - trade and transport 232.314
  - treatment (general) 232.315
  - weight 232.312.31
  - years 232.311.1
- Seed fibres:
  - as minor forest product 892.73
  - growing and collection of 283.4
- "Seed-tree method" 221.21
- Seedbeds, nursery:
  - compacting, rolling 232.323.6
  - formation of 232.322.6
  - tending see Weeding, Watering etc.
- Seeding see Fruiting, Seed dispersal, Sowing etc.
- Seedlings:
  - development (ecology) 181.525
  - grading for lining out 232.324.2
  - lifting 232.324.1
  - lining-out (density) 232.324.3; (season and date) 232.324.4
  - salvage of overgrown 232.326
  - size and quality, effect on subsequent growth 232.324.2

- Seeds:
  - collection 232.312
  - extraction 232.312
  - grading 232.312
  - intellectual property 232.314
  - transgenic experiments 232.311.4
- Selected works (form tag) (081.2)*
- Selection coppice 222.22
- Selection criteria, sample design 571
- Selection felling, as basic type of felling 221.04
- Selection (plant):
  - artificial 165.62
  - natural 165.61
  - see also Breeding
- Selection systems (high forest) 221.4 -
  - group 221.411
  - proper 221.41
- Selective logging 221.42
- Self-pruning 181.63
- Selfing (plant breeding) 165.41
- Semi-chemical pulping and pulp 861.12
- Semi-desert soils:
  - subtropical and tropical 114.442.7
  - temperate (brown) 114.442.3; (grey) 114.442.4
- Semi-trailer vehicles 377.42
- Senescence, physiology of in animals 131.3
- Sense organs 134.8
- Sensitivity of plants to stimuli 161.8
- Separates (form tag) (04)*
- Seres and seral communities, plant 182.21
- Series, felling 614
- Series (form tag) (082.1)*
- Service tests of preservative-treated timber 841.43
- Services, forest see Forest services
- Servitudes 935.5
- Settlement schemes, forest 912
- Severe moisture gradients 852.36
- Sewage sludge
  - after planting 237.4
  - at planting 232.425.2
  - in nurseries 232.322.43
- Shade tolerance 181.21
- Shade trees:
  - for crops 289.4
  - ornamental 273
- Shading:
  - of nursery stock 232.327.12
  - of regeneration or young plantations 236.3
- Shake:
  - as seasoning defect 852.31
  - occurring before conversion 852.18
- Shear strength, wood 812.74
- Shears, thinning 363.2
- Shedding of branches 181.63
- Shelter, marginal: types of felling that afford 221.03
- Shelterbelts 266
- Sheltering:
  - of nursery stock (from wind and rain) 232.327.11
  - of regeneration or young plantations 236.3
  - see also Shading
- Shelters for forest workers 382.3
- Shelterwood coppice system 222.23
- Shelterwood felling, as basic type of felling 221.02
- Shelterwood (high forest) systems:
  - "Blendersaumschlag" 221.224
  - group 221.23
  - irregular 221.23
  - strip 221.223
  - strip-and-group 221.226
  - uniform 221.21
  - wedge 221.225
- Shelterwoods (advance plantings) 235.2
- Shelves, wooden 833.156
- Shifting cultivation 261.3
  - policy 913
- Shingles 834.1
- Shipbrokers; shipping documents 785.3
- Ships:
  - masts 831.48
  - other uses of wood in 838.6
- Shipworms 845.1
- Shoot pruning:
  - in the nursery 232.326.3
  - planting stock 232.412.2
- Shooting:
  - of game see Hunting and shooting
  - of pests 413.2
- Shoots:
  - injuries to 416.1
  - morphology 164.4
- Short rotation; intensive silviculture 238
- Shows 945.24
- Shrews 149.36
- Shrinkage of wood in response to moisture change 812.214
- Shrub layers (ecology) 182.46
- Shrubs and border trees as a protective surround 228.9
- Shrubs, as nurse or auxiliary species 235.42
- Silk, artificial see Rayon
- Silkworms, husbandry of crops grown for 288
- Sills:
  - door 833.151
  - window 833.152
- Silt soils 114.463
- Silvicultural characters of tree species 181
- Silvicultural control of forest injuries 412
- Silvicultural measures:
  - effect on growth 181.65
  - planning 624.3
- Silvicultural systems 22
  - choice from the point of view of management 614
  - influence on logging costs 666
  - see also Coppice, High forest etc.
- Silviculture 2
  - intensive for extra rapid growth 238
- Simple coppice 222.21
- Sinking funds in forestry 672.3
  - financing out of 676.2
- Sinking of timber, preventive measures 378.44
- Siphonogamia 174
- Sirenia 149.5
- Site amelioration 237 [engineering aspects see 385; economic aspects see 651.7]
- Site and stand description (forest management) 622
- Site factors (abiotic): 11
  - manipulation of: as ecological method 182.55

- Site quality, assessment 54 -
  - based on height, diameter, volume etc. 541
  - by ecological methods 542
  - changes in 546
  - influence on economics of the enterprise 644.1
  - relation to production of wood 547
  - relation to total production of vegetable matter 548
- Site studies, general 101
- Site studies in the broadest sense 101
- Situation 113
  - see also Geographical factors in economics
- Size of forest enterprise, influence on economics 644.4
- Size of plants see Planting stock, Seedlings, Stature
- Size of stem or log, influence on logging costs 665
- Skeletal soils 114.448
- Skidding and hauling:
  - equipment 377
  - methods, technique 372
  - see also Animals, Arches, Costs, Horse, Cable, Sledge, Wheeled vehicles etc.
- Skins (animal) 156.42
- Skirtings 833.155
- Slant planting 232.422
- Slash disposal 332.3
- Sledge, transport by 375.2
- Sledge-ways 373.3
- Sledges, logging 377.3
  - costs of 663.23
  - motor 377.37
  - paired 377.32
  - supporting both ends of logs 377.32
  - supporting one end of logs 377.31
  - use of wood in 838.5
  - with racks or containers for small wood 377.33
- Sleepers 831.6
- Sleet 111.784
- Slicing, wood 826.2
- Slides, timber 373.3
- Slime fungi 172.4
- Sloths 149.31
- Small (private) forests 923.4
- Small wood, harvesting of 333
- Smoke, forest injuries and protection 425.1
- Smoke generation for control of forest injuries 414.23
- Snags, disposal of 332.2
- Snedding see Trimming
- Snow 111.784
  - avalanche 116.122
  - classification 116.121.31
  - evacuation 116.123.24
  - forces 116.121.4
  - forest injuries and protection 423.4
  - granular 111.784
  - mechanics of 116.121.4
  - mixed with rain 111.783
  - physical properties 116.121.3
  - properties 116.121.31
  - risk management 116.123
  - road closures 116.123.23
  - safety measures 116.123
  - stress 116.121.4
  - studies of storage and distribution 116.12
- Snow cover 116.121.3
  - development 116.121.3; (meteorology and morphology) 116.121.1
  - energy balance, radiation, heat exchange 116.121.33
  - metamorphism 116.121.32
  - properties 116.121.3
- Snow pack: 116.121 -
  - deposition 116.121.1
  - formation 116.121.1
- Snowdrift 116.121.2
- Snowflakes, congealed 111.787
  - forest injuries 423.6
- Social behaviour, animal (within the species or group) 151.5
  - see also Sociology
- Social economics of forestry see Economics of forestry, social; National economy
- Social problems of work 96
- Social purposes, forest evaluation 652.56
- Socialization see Nationalization
- Societies, forestry and forest products 946.1
- Societies (tag) --094.6*
- Society documents (form tag) (06)*
- Sociology:
  - animal 152
  - plant 182
- Soda pulping and pulp 861.13
- Sodium and its compounds in soil 114.265
- Soil 114 -
  - adsorption in 114.243
  - base exchange in 114.234
  - buffer capacity 114.231
  - colloidal properties 114.24
  - colloidal state 114.242
  - electrical properties 114.17
  - electrochemical properties 114.23
  - field capacity 114.124
  - hygroscopicity 114.125
  - "mineral" 114.36
  - parent material of 114.32
  - pH 114.25
  - physical properties 114.1
  - physico-chemical properties 114.22
  - value of 652.2
- Soil acidification, nurseries 232.322.3
- Soil acidity 114.25
- Soil amendment, lignin as 864.2
  - see also Fertilizers
- Soil atmosphere 114.13
- Soil bacteria 114.61
- Soil biology 114.6
- Soil catenas 114.411
- Soil chemistry 114.2 -
  - inorganic 114.26
  - organic 114.27
- Soil classification 114.4
  - general matters 114.41
  - genetic 114.44
  - traditional (mainly textural) 114.46
- Soil compaction 114.11
- Soil conditioner (nursery) 232.322.49
- Soil conservation 116

- Soil consistence 114.14
- Soil constituents:
  - injurious, toxic 114.53; (damage by) 424.5
  - inorganic 114.26
  - organic 114.27
- Soil cultivation *see* Cultivation, soil
- Soil density 114.11
- Soil depletion 114.58
- Soil depth 114.38
- Soil exhaustion 114.58
- Soil fauna 114.67/.68
- Soil fertility 114.52 -
  - determination 114.521 - (biological methods) 114.521.4; (chemical methods) 114.521.3; (indicator plants) 114.521.6; (physical methods) 114.521.2; (plant analysis) 114.521.5; (vegetation types) 114.521.7
  - fertilizer requirement 114.54
- Soil flora (bacteria, etc.) 114.61/.66
- Soil formation 114.3
  - geological considerations, influence of parent material 114.32
  - influence of water movement 114.31
  - processes in general 114.30
  - relation to climate 114.31
  - relation to vegetative cover 114.33
  - weathering 114.32
- Soil freezing, forest injuries and protection 422.14
- Soil heating, nursery seedbeds 232.323.7
- Soil horizons 114.35/.36
  - A 114.361
  - B 114.362
  - C 114.363
  - eluvial 114.361
  - gley 114.364
  - humus layers 114.354; (mor, raw humus) 114.355; (mull, mild humus) 114.356
  - illuvial 114.362
  - litter 114.351
- Soil husbandry (tag) --021*
- Soil indicator plants 114.521.6
- Soil infiltration capacity 114.123
- Soil inoculation:
  - at time of planting out 232.425.4
  - for site amelioration in checked plantations etc. 237.4
  - in direct sowings 232.332
  - in nurseries 232.322.45
- Soil microbiology 114.68
- Soil microfauna 114.67
- Soil microflora 114.61/.66
- Soil moisture 114.12 -
  - absorption 114.124
  - content 114.122
  - requirements of plants 181.311
  - retention 114.124
- Soil nutrient relations of plants 181.34
- Soil pans:
  - below surface 114.362
  - surface 114.361
- Soil permeability 114.123
- Soil physics 114.1
- Soil porosity 114.123
- Soil preparation:
  - for artificial regeneration 232.216
  - for natural regeneration 231.33
  - in nurseries 232.322
- Soil profile 114.3
  - see also* Soil horizons
- Soil relations of plants 181.32
- Soil rental 651.2
- Soil respiration 114.13
- Soil science 114
- Soil solution 114.28
- Soil sterilization: nurseries 232.322.2
- Soil structure 114.14
- Soil surveys and surveying 114.7
- Soil temperature 114.16 -
  - in connection with hydrological aspects of snow distribution 116.12
- Soil texture 114.15
- Soil toxicity 114.53
  - damage due to 424.5
- Soil types 114.4 -
  - general matters 114.41
  - genetic 114.44
  - non-peaty groundwater 114.443
  - peaty 114.444
  - spatial disposition 114.411
  - traditional (mainly textural) 114.46
  - zonal, of humid climates 114.441
  - zonal, of semi-arid and arid climates 114.442
  - see also* individual types e.g. Brown earths, Podzols
- Soil water 114.12
  - groundwater 114.129
  - [hydrological aspects *Cf.* 116]
- Soil/water régime (hydrology) 116
- Soil working *see* Cultivation soil
- Solid particles in atmosphere: forest injuries due to 426.2
- Solid volume of stacked products 527
- Solonchak soils 114.445.1
- Solonetz soils 114.445.2
- Soloti soils 114.445.3
- Solutes:
  - circulation in plants 161.12
  - exudation from plants 161.13
  - uptake by and movement in plants 161.1
  - uptake by plants 161.11
- Sorting:
  - in sawmills 832.13
  - in veneer and plywood factories 832.23
  - of planting stock 232.411.3
  - of seed 232.312.3
  - of seedlings 232.324.2
  - of timber floated jointly 378.5
  - of wood in the rough (as logging operation) 325
- Sound production by animals 151.8
- Sowing, direct 232.33 -
  - covering methods 232.334
  - density and quantity of seed 232.333
  - mechanized 232.337
  - methods (patch, line etc.) 232.331
  - protective measures 232.336
  - season and date 232.335
  - tools and equipment 232.337
  - use of fertilizers etc. 232.332
- Sowing in nurseries 232.323 -
  - covering 232.323.5
  - density and seed quantity 232.323.2
  - depth of 232.323.5
  - mechanized 232.323.1
  - methods (drilling, broadcasting etc.) 232.323.1

season and date 232.323.3  
 soil conditions 232.323.4  
 soil heating 232.323.7  
 use of glass 232.323.7  
 weather conditions 232.323.4  
 Spacing 232.43  
 Spatial alternation in vegetation 182.24  
 Spatial arrangement of the forest crop (management aspects) 614  
 Spatial disposition of soil types 114.41  
 Special measurements of trees and stands (crown measurements etc.) 53  
*Special reports (form tag) (047.3)*  
 Special treatment, timber crops requiring 238  
 Species, choice of 228.0 -  
   economic aspects 651.71  
   for plantations 232.1  
   management aspects 614  
 Species trials 232.11  
 Specific gravity:  
   soil 114.11  
   wood 812.31  
 Specific heat, wood 812.145  
*Specifications (form tag) (083.7)*  
*Specimens (tags) -013 -*  
   *collection, selection --013.1*  
   *dehydration etc. and mounting --016.3*  
   *embedding, sectioning etc. --016.1*  
   *microscopy --016*  
   *preparation --013.2*  
   *preservation in collections, museums etc. --013.4*  
   *special techniques of microscopical examination --016.4*  
   *staining --016.2*  
*Speeches (form tag) (042.5)*  
 Spermatophyta 174  
 Spiral growth:  
   as defect 852.15  
   influence on wood structure and properties 815.5  
 Splits in wood:  
   as seasoning defect 852.31  
   natural 852.18  
 Splitting see Cleaving  
 Spoil mounds 114.449.8  
 Sponges 143  
 Spools, wooden 835  
 Sports and recreational goods, use of wood in 835  
 Spots, leaf etc. 416.15  
 Spraying methods and equipment (forest protection) 414.22  
 Spring wood 811.41  
 Sprinkling (of stored wood with water) 848.43  
 Sprout see Coppice, Root suckers  
 Spuds, barking 361.2  
 Squirrels 149.32  
 Stabling for animals used in forestry 382.8  
 Stacked wood:  
   solid volume 527  
   units of measure 517  
 Stacking 324  
 Staff quarters, construction 382.7  
 Staff questions:  
   in private forestry 682  
   in State (conditions of service, responsibilities etc.) 681.4; (establishment, ranks and categories) 681.3  
*Staff questions (tag) --068*  
 Stain fungi, attack on wood 844.1  
 Staining (dyeing) of wood 829.12  
*Staining (microscopy) (tag) --016.2*  
 Stairs, use of wood in 833.18  
 Stakes, wooden 831.51  
 Stand:  
   and site description (forest management) 622  
   composition and constitution: silvicultural aspects 228  
   constitution and changes therein (as regards value) 653; (mensurational studies) 568  
   tables 567  
*Standardization of test conditions (tags) cf. --014.6 and --015.6*  
 Standards:  
   coppice with 222.1  
   high forest with 221.51  
*Standards (specifications) (form tag) (083.7)*  
 Stanols 863.4  
   chemistry 813.2  
 State assistance see Public assistance  
 State forests 922.1  
 State supervision and regulation of forestry see Public supervision  
 Static bending strength, wood 812.711  
*Statistical design and evaluation of tests and experiments (tag) --015.5*  
*Statistical tables; tables of statistics; statistical documents (form tag) (083.4)*  
 Statistics and resources, forest 905 -  
   general forest statistics 905.1  
   resources, balance of growth and depletion, "cut" 905.2  
 Statistics, business see Economics, Marketing  
*Statistics, collection and elaboration (tag) --05*  
 Statistics, game management and hunting 156.9  
 Stature of plants 181.71  
 Steaming, wood 846  
 Stem analysis:  
   diameter and basal-area increment 561.26  
   volume increment 562.16  
 Stem, assessment of damage to 573  
 Stem-flow 116.11  
 Stem of plants, morphology 164.4  
 Stem of trees:  
   form see Form  
   size, influence on logging costs 665  
   surface area 536  
 Stemwood, variation in structure and properties with position in tree 815.32  
 Steps, wooden:  
   portable 831.9  
   stairs 833.18  
 Sterilization, soil, in nurseries 232.322.2  
 Stevedoring 788.3  
 Sticks, measuring 365.7; (combined with calipers) 365.8  
 Stocks of forest products see Supplies  
 "Stone" in wood 852.17  
 Stony soils 114.466  
 Stoppers, wooden 835  
 Storage, of seed 232.315.2  
 Storage of snow by vegetation 116.12  
 Storage of wood:  
   in ports 788.4  
   in the forest and at log dumps 34; (costs of) 662.4  
   in timberyards 848.4/.5; (converted timber) 848.5;  
   (round timber, land storage) 848.41; (round timber, water storage) 848.42; (sprinkling) 848.43

- prevention and control of attack by animals 845.57
- prevention and control of attack by plants (fungi etc.) 844.47
- Storage (tags) --084.4*
- Storeyed structure, wood 811.21
- Storms, forest injuries and protection 421.1
- Stoves, wood-burning 839.82
- Stranded timber, salvage 378.42
- Stranding of timber, preventive measures 378.41
- Stratification, seed 232.315.3
- Strawberry mark in wood 852.15
- Streaks in wood:
  - “mineral” 852.15
  - resin 852.14
- Stream-flow 116.3
- Stream training 116.7
  - engineering works 386
  - see also Floating
- Street trees 273
- Strength properties (tag) --015.26*
- Strength properties, wood 812.7
- Stress grading, timber 854.21 -
  - mechanical 854.212
  - visual 854.211
- String instruments 835
- Strings, measuring 365.7
- Strip systems 221.22 -
  - alternate clear-strip 221.222
  - “Blendersaumschlag” 221.224
  - progressive clear-strip 221.221
  - shelterwood strip 221.223
  - strip-and-group 221.226
  - wedge 221.225
- Strips:
  - regeneration by 230.3
  - road-, rail-, and canal-side 265
- Structural composites 833.123
  - production facilities 832.5
- Structural tests (tags) Cf. --014.1 and --015.1*
- Structure:
  - soil 114.14
  - stand (as regards value) 653; (mensurational studies) 568; (silvicultural aspects) 228
  - vegetation 182.51
  - wood and bark 811; (special features and abnormal structure) 811.2; (storeyed structure) 811.21
  - see also Reaction wood, Pith flecks etc.
- Structures, timber in 833
- Struts, wooden (as building components) 833.122
- Stump:
  - analysis (diameter and basal-area increment) 561.27; (volume increment) 562.17
  - measurements, estimation of diameter from 521.27
- Stump-grubbing tools and equipment 367 -
  - auxiliary equipment 367.6
  - general, vertical versus horizontal pulling or levering 367.0
  - hand-operated tripod stump-pullers 367.2
  - hand-operated windlass stump-pullers 367.3
  - other devices 367.5
  - other machines 367.4
- Stump, measurements, estimation of diameter from 521.27
- Stumpage 738; (for sale and purchase) 652.51
- “Stumping” of planting stock 232.412.2
- Stumps:
  - dead (ecological role) 181.76
  - disposal of 332.2
- Stumpwood, structure and properties 815.33
- Subsidies:
  - forest products industries 794.41
  - forestry 941; (as method of financing) 676.2
  - marketing 742.2
  - transport 784.41
- Subsidies (tag) --094.1*
- Substitute species, interplanting with, for site amelioration 237.51
- Substitutes (tags) --081.3/.4*
- of different natural type --081.4*
- of same natural type --081.3*
- Subtropical soils:
  - of humid climates 114.441.7
  - of semi-arid and arid climates 114.442.7
- Subways, wood in 833.6
- Succession, natural (plant) 182.21
  - “afforestation” by 234
- Suckers see Root suckers
- Sugar, sap:
  - as minor forest product 892.68
  - crops, growing and collection 284.4
- Sugar, wood 863.4
  - for cattle fodder 863.6
- Sulphate pulping and pulp 861.14
- Sulphite pulping and pulp 861.15
- Summaries (form tag) (abstracts, surveys) (048)*
- Summer wood 811.42
- Sun scorch (“scald”) 422.3
- Sunken timber, salvage 378.45
- “Superfluous” substances of plants 160.25
- Supervision:
  - of forestry, public see Public supervision and control of regeneration or young plantations 236.4
- Supplies and stocks of forest products see Marketing
- Suppression and dominance in forest stands 228.12
- Surface area of stem and/or branches 536
- Surface filling and sealing of wood 829.15
- Surgical applications of wood 835
- Surveying 58
  - soil 114.7
  - vegetation (ecological) 182.58
- Surveys, aerial 585 -
  - aircraft, crew, flying conditions 586
  - applications (forest mensuration) 587.5; (other forestry purposes) 587.6; (vegetation and land-use surveys) 587.7
  - interpretation of photos 587.2
  - photographic technique and equipment 587.1
  - preparation of mosaics and maps 587.3
  - visual reconnaissance 588
- Surveys, enumeration 524.6 -
  - based on both strips and plots 524.633
  - based on plots 524.634
  - based on strips 524.632
  - extensive (regional) “forest surveys” 524.61
  - of smaller areas 524.62
  - organization and work of measuring parties 524.46
  - recording of data 524.41
  - see also Sampling



Surveys (*form tag*) --05  
     *summaries, abstracts (048)*  
     *polls (049.5)*  
 Surveys, game 156.2  
 Surveys, ground 581/584 -  
     application of maps to special purposes 583  
     fieldwork 581  
     mapping; drawing-office and subsequent work 582  
 Surveys, regeneration 236.4  
 Surveys, soil 114.7  
 Sustainable forest management, criteria and indicators  
     for 624.5  
 Sustained yield:  
     as a principle of management 611  
     methods of yield regulation 624.1  
     public supervision and control 935.1  
 Swelling of wood in response to moisture changes  
     812.214  
*Syllabuses (form tag) (073)*  
 Symbiosis:  
     animal (as mode of life) 151.351  
     plant (as mode of life) 181.351; (pure physiology)  
     161.38  
*Symposia (form tag) (082)*  
 Synecological measurements and methods, plant 182.5  
 Synecology, plant 182  
 Systematic botany 17  
 Systematic zoology 14  
 Systems of measurement 51  
 Systems, silvicultural 22  
     influence on logging costs 666  
 Szik soils 114.445.2

## T

Tables and their construction:  
     form factor, form height 524.121  
     form quotient, form classes 524.131  
     height 522.31  
     mid-diameter 521.321  
     money yield 653  
     sectional-area 521.51  
     stand 567  
     volume 524.315  
     volume by assortments 525.1  
     yield 566; (by assortments) 566:525.1  
*Tables; matter in table form (form tags): numerical; con-  
 version tables; ready reckoners (083.5)*  
     *of mathematical formulae (083.3)*  
     *of statistics; statistical tables (083.4)*  
     *tabulated data other than numerical tables (083.6)*  
 Tallies 524.41  
 Tanbark, as minor forest product 892.41  
     from wood 866.4  
     growing and harvesting 282.1  
 Tanks, wooden 834.33  
 Tanstuffs:  
     as minor forest product 892.41  
     from wood 866.4  
     growing and harvesting 282.1  
 Taper expressed as gradient 524.14  
     see also Form  
 Tapes, timber-measuring 365.7  
 Tapirs 149.72  
 Tapping, husbandry of crops grown for (including tap-  
     ping methods) 284

Tar:  
     as preservative 841.11  
     from dry distillation of wood 867.8  
 Tariffs, transport 783  
     see also Duties, Wages  
 Taste of wood 813.7  
 Taungya method of plantation establishment 232.22  
     see also Alternate forestry and agriculture, Shifting  
     cultivation  
 Taxation, forest 95  
     valuation for 652.52  
*Taxation (tag) --095*  
 Taxonomy:  
     animal 14  
     plant 17  
*Teaching aids (form tag) (072)*  
*Technical dictionaries (form tag) (038)*  
*Technical documents (form tag) (083)*  
*Technical publications (form tag) (066)*  
 Telecommunications, forest:  
     engineering aspects 387  
     planning and organization 685  
     radio 685.2  
     telephonic and telegraphic 685.1  
     visual 685.3  
*Telecommunications (tags) -065 -*  
     *radio --065.2*  
     *telephonic, telegraphic --065.1*  
     *visual --065.3*  
 Television programs 945.23  
 Temperature, air 111.24 -  
     effect of vegetation on (hydrological studies) 116.13  
     forest injuries and protection 422  
     see also Frost, Low winter temperature  
 Temperature relations of plants 181.22 -  
     effect on the environment 181.223  
     reaction to cold 181.221.1  
     reaction to heat 181.221.2  
     requirements and tolerance in general 181.221  
     seasonal requirements and tolerance 181.222  
 Temperature, soil 114.16  
 Temporal alternation in vegetation 182.25  
 Tending 24 -  
     of nursery beds 232.325  
     of stands in the seedling stage 236; (sheltering and  
     shading) 236.3; (tending of the young crop itself)  
     236.2; (weeding) 236.1  
     of stands past the seedling stage 241/244  
     of trees 245  
     technique of harvesting small wood 333  
     see also Costs  
 Tenoning 823.3  
 Tensile strength, wood 812.76  
 Tension wood see Reaction wood  
 Teratology:  
     animal 132  
     plant 162  
*Terminology (tags) -011 -*  
     *scientific --011.1*  
     *trade --011.3*  
     *vernacular, popular --011.2*  
 Termites, attack on wood 845.3  
 Terra rossa 114.441.7  
*Test factors, effect on properties tested (tags) cf.*  
     *--014.6 and --015.6*

*Testing (tags) --01 -*  
*qualitative --014 [which see for subdivisions]*  
*quantitative --015 [which see for subdivisions]*  
*Tests (form tag) (079)*  
*Textbooks (form tags) (02)*  
*comprehensive, academic (021)*  
*elementary, popular (023)*  
 Textiles from wood cellulose 861.4  
 Textural soil types 114.46  
 Texture:  
     soil 114.15  
     wood 811.61  
 Thallophyta 172.2  
 Thallus 164.2  
 Thatching materials as minor forest products 892.84  
*Thematic atlases (form tag) (084.42)*  
 Thermal decomposition of wood, chemistry of 813.4  
     see also Distillation  
*Thermal properties: tests of (tags) cf. --014.24 and --015.24*  
 Thermal properties, wood and bark 812.14 -  
     calorific value 812.144  
     conductivity and diffusivity 812.141  
     expansion and contraction 812.142  
     physics of ignition and combustion 812.143  
     specific heat 812.145  
*Theses (form tag) (043)*  
 Thickness, bark 523.1  
 Thinning-out of nursery seedlings 232.325.4  
 Thinning(s) 242 -  
     costs and profitability 651.74  
     precommercial 241  
     role in calculation of volume increment 562.22  
     technique of harvesting small wood 333  
 Thinning shears 363.2  
 Thunderstorms 111.15  
 Ties see Sleepers  
 Timber and timbers see also Wood, Woods  
 Timber assortments:  
     forest 325  
     hewn timber 831.7  
     planed timber in general 832.182  
     sawn timber in general 832.181  
     see also Grading  
 Timber connectors 824.5  
 Timber crops requiring special treatment 238  
 Timber-growing outside the forest: 265/266  
     policy regarding 915  
 Timber industries and products 83  
     see also Economics  
 Timber reserves as factor in forest management 618  
 Timberstrand 832.288  
 Timberyard equipment:  
     mobile 848.7  
     permanent installations 848.6  
 Timberyard practice 848  
 Time studies:  
     felling and related operations 352  
     general 305  
 Tips, industrial 114.449.8  
 Tissue culture 232.328.6  
     breeding 165.442  
 Tissues (histology):  
     animal 138  
     plant (general) 168  
     wood and bark 811.1  
 Tolerance see Shade etc.  
 Tool handles, wooden 835  
 Tools for amelioration 237.7  
*Tools, machines and equipment (tags) cf.--017 and --087, with note at -- 017*  
 Tools, machines and equipment, general, studies of 307  
     see also entries under the names of individual operations, tools etc.  
 Topography 113.4  
     studies of effects on infiltration, run-off and erosion 116.23  
 Topping before felling 322.5  
 Torches for nursery weeding 232.325.23  
 Torrent training:  
     engineering works 386  
     other measures 116.7  
     protective works 384.3  
 Torsion, resistance of wood to 812.77  
 "Toughness," wood 812.712  
 Tours, educational (forestry) 945.35  
 Towers, look-out; construction 382.4  
 Toxic constituents:  
     of soils 114.53; (injuries due to) 424.5  
 Toxic constituents, of woods 813.8  
 Toxicity:  
     of plant constituents to the plant 160.26  
     side effects of chemical control 414.4  
     wood preservatives 841.14  
 Toys, wood in 835  
 Trace elements:  
     fertilizing nurseries with 232.322.42  
     fertilizing planting sites with 232.425.1  
 Tracheids:  
     ray 811.153  
     wood 811.151; (shape, dimensions) 811.152  
 Track for forest railways 377.71  
 Tractors (wheeled or caterpillar) 377.44 -  
     costs of 663.24  
     transport by 375.4  
*Trade catalogues (form tag) (085.2)*  
 Trade, forest products see Marketing  
*Trade marks (form tag) (088.7)*  
*Trade names (tag) --011.3*  
*Trade publications (form tag) (085)*  
*Trade (tag) --07*  
 Trailer vehicles 377.42  
     for small wood 377.43  
 Training:  
     in work science and efficiency 303  
     practical, in forestry 945.33  
*Training (tag) --094.8*  
 Transects (plant ecology) 182.52  
 Transgenic experiments on seeds 232.311.4  
 Transit duties 742.33  
 Transmission lines 387  
 Transpiration 161.16  
     hydrological aspects 116.13  
 Transplant beds, tending 232.325  
     see also Weeding etc.  
 Transplanting 232.324  
     see also Lining out, Lifting  
 Transplants:  
     root pruning 232.326.1  
     shoot pruning 232.326.3  
     undercutting, wrenching 232.326.2

Transport of forest products, technique, equipment etc. 37 -  
 air transport 376  
 land transport (methods, technique) 372/376; (equipment, machines etc.) 377  
 planning and organization of installations 686  
 water transport 378  
 within sawmills 832.13  
 within veneer and plywood mills 832.23  
 see also Costs, Economics

Transport of men, supplies and equipment in forestry  
 planning and organization 687 -  
 air 687.3  
 land 687.1  
 water 687.2

*Transport of men, supplies and equipment (tags) --067*  
 air --067.3  
 land --067.1  
 water --067.2

Transport of plants 232.412.4  
 Transport of seed 232.314  
 Transport, relations of forests and forestry to 908.2  
 Trapping of pests 413.1  
*Travel reports (form tag) (047.2)*  
*Travels, reports on (form tag) (079.3)*

Tree breeding 165.3  
 basic methods 165.4  
 trials of products 232.13

Tree classes 228.125  
 distribution of growth by 568

Tree compasses 365.7  
 Tree improvement 165.3  
 economics -

Tree layers:  
 dominant 182.41  
 understorey 182.42

Tree-planting days 945.27  
 Tree sanctuaries 907.12  
 Tree shrews 149.78  
 Tree surgery 245.18

Trees:  
 autecology of 181  
 Christmas (as product) 892.51; (silviculture) 281  
 dead, ecological role 181.76  
 for seaside planting 273.1  
 hedgerow 265  
 nurse 235.4  
 ornamental, street and roadside 273  
 protected 907.12  
 shade, for crops 289.4  
 silvicultural characters of 181

Trends, trade see Marketing

Trestles, logging 364.6

Trials of:  
 hybrids and other products of tree-breeding 232.13  
 races and provenances 232.12  
 species (including exotics) 232.11

Trimming:  
 logs 323.2  
 stumps, effect on coppicing 231.44  
 thin wood sheets 826.5

*Trip reports (form tag) (047.2)*

Trolleys, hand-logging 377.43

Tropical soils:  
 of humid climates 114.441.7  
 of semi-arid and arid climates 114.442.7

Tropisms, plant 161.8  
 Truck see Lorry  
 Trunk, morphology 164.4  
 Trusts, marketing 741.4  
 Tubes, raising plants in 232.329.6  
 Tundra soils 114.441.1  
 Tunnels, wood in 833.6  
 Turf lifting in checked plantations 237.9  
 Turning, wood 823.5  
 "Turpentine" see Tapping  
 Twigs, morphology 164.4  
 Two-storeyed high forest 221.52  
 Tyloses 811.144  
 Types, forest:  
 as index to soil fertility 114.521.7  
 as vegetation types 187

## U

Undercutting of nursery stock 232.326.2  
 Undergrowth:  
 burning 231.322  
 control of undesirable growth 249  
 cutting, scraping etc. 231.321  
 grazing 231.323  
 manipulation preparatory to natural regeneration 231.32  
 poisoning 231.324

Underplanting 235.1  
 Understorey tree layers, ecology 182.42  
 Unemployment in forestry and forest products industries 961  
 Uneven-aged forest; uneven-aged stands 228.6  
 Uniform system 221.21  
 Unions, workers' 967  
 Unloading:  
 barges and boats 378.8  
 equipment 377.1  
 in ports (economic aspects) 788.3  
 technique 371

Urban forestry 270  
 Urogenital system 134.6  
 Usages see Marketing, Economics of transport, Ports  
 Useful animals, general 136.1  
 Useful plants, general 166.1  
 Utilities, relation between forest and 917  
 Utility, national (social), of forests:  
 direct 906  
 indirect 907

Utilization:  
 degree of in logging 331  
 forest (harvesting of wood; logging and transport) 3  
 forest (products and their utilization) 8  
 injurious 462

## V

Vacuum drying 847.3  
 Valuation, forest 652 -  
 basic concepts; categories of value; theory and methods 652.1  
 for balance-sheet purposes 652.55  
 for cases of damage and compensation 652.54  
 for cases of expropriation 652.53  
 for other special purposes 652.59  
 for sale and purchase 652.51  
 for social and recreation purposes 652.56

- for taxation 652.52
- of capital assets 672.1
- Valuation (tag) --064*
- Value added wood products 835/836
- Value:
  - growing stock 652.3
  - increment and structure of stands 653
  - land 652.2
  - of cultural heritage 656
  - of landscape 656
  - of nature conservation 652.57
  - of non-wood products 655
  - whole forests 652.4
- Value increment and structure of stands 653
- Vanillin from lignin 864.6
- Vapour drying 847.4
- Vapours, permeability of wood to; flow in wood 812.237
- Variation, natural:
  - in animals 135
  - in plants 165.5; (geographical) 165.52; (morphological) 165.51; (physiological) 165.53
- Varnishing 829.17
- Vascular cryptogams 173.5
- Vascular plants, general: 173.5+174 -
  - histology 168
  - morphology 164.3/.9
- Vats, wooden 834.33
- Vegetation:
  - alternation in 182.2; (seasonal) 182.28; (spatial) 182.24; (temporal) 182.25
  - climaxes and proclimaxes 182.22
  - ecotones 182.23
  - effects on infiltration etc. 116.25
  - effects on precipitation etc. 116.1
  - effects on soil development 114.33
  - experimental methods 182.5
  - for avalanche control 116.123.12
  - history 182.1
  - layers 182.4
  - manipulation of, as experimental method 182.53
  - methods of study 182.5
  - periodicity in 182.2
  - quadrats 182.52
  - sociology (synecology), principles and methods 182
  - structure of 182.51
  - succession of 182.21
  - surveys 182.58; (applications of aerial photography) 587.7; (mapping) 182.58
  - transects 182.52
  - types 187; (as soil indicators) 114.521.7
  - units of 182.3
- Vegetative propagation:
  - direct formation of stands by 232.5
  - nursery methods 232.328
  - see also Cuttings etc.
- Vegetative reproduction 181.51
- Vegetatively propagated stock 232.411.4
- Vehicle manufacture, use of wood in 838
- Vehicles, forest transport 377
- Veneer and plywood logs 832.20
- Veneer and plywood mills 832.2 -
  - lay-out; planning; power; machinery 832.21
  - mill operation 832.22
  - output per unit (recovery and waste) and factors affecting it 832.25
- products 832.28; (blockboard) 832.283; (composite-wood assemblies) 832.286; (plywood) 832.282; ("sandwich materials") 832.284; (veneer) 832.281
- rationalization (general); organization of labour 832.24
- transport and sorting within the mill 832.23
- Venison 156.41
- Vermes 145.1
- Vernalization 232.315.3
- Vertebrata 147/149
- Vessels, wood 811.14 -
  - contents 811.144
  - grouping and arrangement 811.142
  - length of segments 811.143
  - perforation plates 811.141
  - size and number 811.143
- Veteran trees 181.71
- Vibrational tests (tags) cf. --014.22 and --015.22*
- Videos, forestry etc. 945.22
- Vines see Climbers
- Virgin stands 228.81
- Virus diseases:
  - forest injuries and protection 444
  - protection in nurseries 232.327.2
- Viscosity tests (tags) cf. --014.23 and --015.23*
- Visibility 111.91
- Visual communications in forestry, planning and organization 685.3
- Visual stress grading 854.211
- Vlei soils 114.443.7
- Volcanic ash, injuries due to 426.2
- Voles 149.32
- Volume by assortments 525.1
- Volume increment 562 -
  - groups and stands 562.2; (gross increment and net change) 562.21; (mortality and thinnings) 562.22; (recruitment) 562.23
  - groups and stands, methods of determination 562.4; (direct single measurement of sample trees) 562.41; (indirect assessment) 562.46; (méthode du contrôle) 562.42; (other direct methods) 562.45
  - single trees 562.1
- Volume, merchantable 525.5
- Volume of logs:
  - by formula 526.5 - (based on butt diameter) 526.53; (based on mid-diameter or mean of top and butt) 526.52; (based on top diameter) 526.51; (measurement by sections) 526.54
  - by log rules 526.6
  - by water displacement 526.2
  - conversion from one method to another 526.7
- Volume of single trees 524.2
- Volume of stacked products:
  - converting factors; determination of solid volume 527
  - units of stacked volume 517 - (British and American) 517.2; (metric) 517.1; (other) 517.9
- Volume of stands:
  - as determined by felling 524.32
  - based on all trees plus sample-tree data 524.34
  - based on all trees without sample-tree data 524.33
  - based on area and past felling records 524.36
  - based on area and yield-table data 524.37
  - ocular estimation 524.38
- Volume of whole forests 524.6

Volume, solid:  
systems and units of measurement 516  
systems and units of measurement, British and American 516.2 - (board-foot measure by log rules) 516.26; (Hoppus (quarter-girth)) 516.25; (true board-foot measure) 516.22; (true cubic-foot measure) 516.21  
systems and units of measurement, metric 516.1 - (trade, nominal, customary measure) 516.15; (true measure) 516.11  
Volume tables and their construction 524.315

## W

Waferboard 862.2  
Wages 962  
as item in logging costs 663.1  
influence on forestry as a business 644.7  
performance data for establishing tariffs 353  
tariff agreements 962  
Waggons, logging:  
costs of 663.23  
for small wood 377.43  
for timber 377.42  
Waggons, use of wood in 838.1  
Wagner's "Blendersaumschlag" 221.224  
Wallboard see Fibreboards, Chipboards  
Walls, use of wood in 833.14  
Wane 852.2  
Warping, wood 852.32  
Washboarding, wood 852.35  
Waste and recovery studies:  
sawmilling 832.15  
veneer and plywood manufacture 832.25  
Waste in logging operations 331  
Waste land, policy regarding 914  
Waste pulping liquors, utilization 861.19 see also Lignin  
Waste wood, industrial, processing and uses 839.8 -  
briquettes and briquetting 839.813  
other waste wood (as fuel) 839.812; (other uses) 839.84  
sawdust (as fuel) 839.811; (other uses) 839.83  
use as fuel, general 839.81  
wood-burning stoves etc. 839.82  
*Wastes and their utilization (tag) --088.6*  
Water:  
circulation in plants 161.12  
essential to plant 160.242  
exudation from plants 161.13  
permeability of wood to; flow in wood 812.231  
Water cycle 116  
rôle of plant species in 181.312  
Water erosion see Erosion  
Water relations of plant species:  
ecological aspects 181.31  
rôle in water cycle 181.312  
water requirements 181.311  
Water-retaining capacity, soil 114.124  
Water sanctuaries 907.14  
Water, soil 114.12 -  
absorption 114.124  
effects of movement on profile 114.31  
filtration 114.123  
groundwater; water table 114.129  
[hydrological aspects see under 116]  
retention 114.124  
uptake and movement in plants, physiology of 161.1  
uptake by plants 161.11  
Water storage of timber 848.42  
Water supply, engineering aspects 385.6  
Water, transpiration 161.16  
*Water transport of men, supplies and equipment (tag) --067.2*  
Water transport of men, supplies and equipment, in forestry 687.2  
Water transport of wood, technique 378  
Watering, in nurseries 232.325.1  
Waterlogging, forest injuries 424.2  
Waterways:  
engineering works 386  
installations in connection with floating and rafting 378.7  
other special measures for correction and maintenance 116.7  
Waxes:  
as minor forest product 892.64  
from wood 866.2  
Weapons, hunting and shooting 156.3  
Weathering 814.1  
as factor in soil formation 114.32  
Webpages 945.28  
Wedge system 221.225  
Wedges, logging 363.4  
Weed control and weeds:  
in pastures 268.44  
in the forest 441  
Weed-killers see Herbicides  
Weeding:  
nurseries 232.325.2 - (hand weeding and hoeing) 232.325.21; (mechanical) 232.325.22; (with chemicals) 232.325.24; (with torches etc.) 232.325.23  
regeneration and young plantations 236.1  
Weight:  
log measurement by 526.1  
units of 518; (British and American) 518.2; (metric) 518.1  
Weight tables 526.11  
Welfare, workers' 96  
Wells 385.6  
Whales 149.5  
Wheelbarrows, logging 377.43  
Wheeled vehicles for logging 377.4  
Wheels, skidding (supporting log at one end) 377.41  
Wheelwrighting 838.1  
Whole tree harvesting 331  
Wild animals 136.0  
Wilderness areas, management 631  
Wilding stock 232.411.6  
Wildlife management 156  
Wilts 416.16  
Winch logging:  
with ground line 375.11  
with overhead line 375.12  
Winches 377.22  
Wind 111.5  
reaction of plants to 181.23; (to particular types of wind) 181.232; (tolerance in general) 181.231  
Wind erosion:  
sand fixation 116.82  
studies of 116.4  
Wind injuries and protection from wind:  
in nurseries 232.327.11  
in the forest 421; (constant winds) 421.2; (storms) 421.1

Windbreaks 266  
 Windows, window frames, sills etc.: use of wood in 833.152  
 Wireless networks (for forest engineering operations) 387.2  
 Witches' brooms 416.17  
 Wolves 149.74  
 Wood:  
   as a substance (structure and properties) 81  
   as fuel 831.1  
   economy in the use of 88  
   fossilized 814.8  
   old 814.7  
   plant chemistry 160.204  
   replacement by competitive materials 88  
   uses of 83 [for general information on individual woods and their uses see 810]  
   *see also under the individual properties etc.* (e.g. Chemistry, wood; Structure, wood)  
 Wood ashes as minor forest product 892.3  
 Wood, branch, degree of utilization and waste 331.3  
 Wood-burning stoves 839.82  
 Wood-cement concrete 862.4  
 Wood, crown, degree of utilization and waste 331.2  
 Wood-destroying fungi, attack by 844.2  
 Wood flour 839.2  
 Wood wool 839.1  
 Wood-wool building slabs 862.1  
 Wooden-house factories and manufacture 832.4  
   products 832.48; (prefabricated houses) 832.481;  
   (standardized parts of houses) 832.482  
 Woodlots 923.4  
 Woods, general information on 810  
 Woodware, industrial and domestic utility 835  
 Woodwind instruments 835  
 Work:  
   hygiene 304  
   methods of study (laboratory) 301  
   physiological and psychological problems 302  
   planning of (administrative aspects) 684; (organization, as problem of work science) 308; (organization in sawmills) 832.14; (organization in veneer and plywood mills) 832.24  
   social problems 96  
 Work performance and efficiency:  
   general 300 - (conditions-e.g. weather, site, stand-affecting) 306; (evaluation of performance) 305; (human physiology and psychology) 302; (methods of study) 301; (performance and time tables) 305; (sequence of work) 305; (time study methods) 301  
   in felling and related operations 35 - (conditions-e.g. weather, site, stand-affecting) 356; (performance and earnings, statistics and comparisons) 355; (performance studies) 352; (performance tables, wage tariffs and piece rates) 353; (time study methods) 352  
 Work-places, uses of wood in 833.3  
 Work, safety 304  
 Work science (work studies), general 300  
   methods of study (laboratory) 301  
   training in 303  
   *see also* Tools, machines and equipment  
 Work technique and efficiency (tags) --035  
 Workability; working properties of wood 812.8

Workers':  
   associations, unions, clubs etc. 967  
   housing and holdings 965  
   insurance 964  
   international organizations 972.4  
   quarters (forest workers) construction 382.7; other aspects 686.2; *see also* Logging camps, Huts etc.  
 Working animals, general: studies of 307  
 Working circles 615  
 Working plans, forest 62 -  
   actual 628  
   control of 625  
   description of site and stand etc. 622  
   for special conditions 627 - (demonstration and experimental forests) 627.2; (other special conditions) 627.9; (protection forests) 627.1; (recreational forests etc.) 627.3  
   planning 624 - (growing stock: quantity and composition) 624.2; (particular silvicultural measures) 624.3; (to minimize injuries) 624.4; (yield; yield regulation) 624.1  
   preliminary reports 621  
   preparation of 622  
   reconnaissance work 621  
   revision of 626  
   short and long term 62  
 Working time (social policy) 963  
 World Wide Web 945.28  
 Wounds, wood defects due to 852.17  
 "Wrenching" 232.326.2  
 WWW 945.28

## X

Xylem 811.18  
 Xylitols 863.4  
   chemistry 813.2

## Y

Yarns, as minor forest products 892.73  
 Yearbooks (*form tag*) (058)  
 Yeast from wood hydrolysates 863.5  
 Yellow earths 114.441.7  
 Yield:  
   annual or periodic assessment 624.1  
   models 566  
   progressive, as a principle of management 611  
   regulation 624.1  
   sustained (as a principle of management) 611; (public supervision and control) 935.1  
   tables 566 (assortment yield tables) 566:525.1;  
   (money yield tables) 653; (use to determine volume increment) 562.46; (use to determine volume of stands) 524.37

## Z

Zebras 149.72  
 Zonal soils:  
   of humid climates 114.441  
   of semi-arid and arid climates 114.442  
 Zones, climatic 111.81  
 Zoology:  
   ecological 15  
   economic (general) 136  
   general 13  
   systematic 14

# Geographic index

## A

Afghanistan. Islamic State of Afghanistan (Afghanistan. Dowlat-e Eslami-ye Afghanistan) (581)  
Africa (6)  
African islands of the Indian and South Atlantic oceans (69)  
Alabama (736.1)  
Alaska (739.8)  
Albania. People's Socialist Republic of Albania (496.5)  
Alberta (712.3)  
Algeria. Democratic and Popular Republic of Algeria (Al Jaza'ir. Al Jumhuriyah al Jaza'riyah ad Dimuqratiyah ash Sha'biyah) (65)  
American Samoa (USA) (961.33)  
Andorra. The Principality of Andorra. Principat d'Andorra (467.2)  
Angola. Republic of Angola (Angola. Republica de Angola) (673)  
Antarctic territories. South Polar regions (99)  
Arabian states and territories (53)  
Arctic territories (98)  
Argentina. Argentine Republic (82)  
Arizona (739.1)  
Arkansas (736.7)  
Armenia. Republic of Armenia. Hayastan (479.25)  
Arquipélago da Madeira (469.8)  
Arquipélago dos Açores (Azores) (469.9)  
Asia (5)  
Australia. Commonwealth of Australia (94)  
Austria. Republic of Austria. Republik Österreich (436)  
Azerbaijan (479.24)

## B

Bahamas. Commonwealth of the Bahamas (729.61)  
Bahrain. State of Bahrain (536.5)  
Balkan states in general (497)  
Baltic States (474)  
Bangladesh. People's Republic of Bangladesh (Bangladesh. Gana Praja-tantri Bangladesh) (549.3)  
Barbados (729.86)  
Belarus. Republic of Belarus (476)  
Belgium. Kingdom of Belgium (493)  
Belize (728.2)  
Benin. Republic of Benin (668.2)  
Bermudas (Somers Islands) (UK) (729.9)  
Bhutan. Kingdom of Bhutan. Druk-yul (541.31)  
Bolivia. Republic of Bolivia (84)  
Bosnia and Herzegovina. Bosna i Hercegovina (497.15)  
Brazil. Federative Republic of Brazil (81)

British Columbia (711)  
British Indian Ocean Territory (BIOT) (UK) (697)  
British Isles (Great Britain, Ireland and minor islands) (41)  
Brunei. State of Brunei Darussalam (592.6)  
Bulgaria. Republic of Bulgaria (497.2)  
Burkina Faso. People's Democratic Republic of Burkina Faso (662.5)  
Burundi. Republic of Burundi (675.97)

## C

California (739.4)  
Cambodia. Kingdom of Cambodia (596)  
Cameroon. Republic of Cameroon (671.1)  
Canada (71)  
Canary Islands. Canarias (460.41)  
Cape Verde. Republic of Cape Verde (665.8)  
Caribbean territories. West Indies (Antilles) (729)  
Caucasus as a whole (479)  
Central African Republic (674.1)  
Central American states (728)  
Central Europe (4-191.2)  
Chad. Republic of Chad (674.3)  
Chile. Republic of Chile (83)  
China. People's Republic of China (510)  
Colorado (738.8)  
Congo. Republic of the Congo (672.4)  
Connecticut (734.6)  
Cook Islands (New Zealand) (962.3)  
Corse (Corsica). Région (449.45)  
Costa Rica. Republic of Costa Rica (728.6)  
Côte d'Ivoire (Ivory Coast). Republic of Côte d'Ivoire (666.8)  
Crna Gora (Montenegro) (497.16)  
Croatia. Republic of Croatia. Hrvatska (497.5)  
Cuba. Republic of Cuba (729.1)  
Cyprus. Republic of Cyprus (564.3)  
Czech Republic. Czechia (Cesk Republika. Cesko) (437.3)  
Czechoslovakia (1918-1992) (437)

## D

Delaware (735.1)  
Democratic Republic of Congo (675)  
Denmark. Kingdom of Denmark (489)  
District of Columbia. Washington DC (735.3)  
Djibouti. Republic of Djibouti (677.1)  
Dominican Republic (729.3)

## E

Eastern Länder (430.2)  
Ecuador. Republic of Ecuador (866)  
Egypt and Sudan (62)  
Egypt. Arab Republic of Egypt. Misr (620)  
El Salvador. Republic of El Salvador (728.4)

England (410.1)  
Equatorial Guinea. Republic of Equatorial Guinea (671.8)  
Eritrea. Republic of Eritrea (635)  
Estonia. Republic of Estonia (474.2)  
Ethiopia and Eritrea (63)  
Ethiopia. Federal Democratic Republic of Ethiopia (Ityop'iya. Ityop'iya Federalawi Demokrasiyawi Ripeblik) (630)  
Europe (4)  
European Arctic islands (984)  
European Turkey (560.11)

## F

Falkland Islands. Falkland Islands and Dependencies (UK) (829.1)  
Fiji. Republic of Fiji (961.1)  
Finland. Republic of Finland. Suomi (480)  
Florida (735.9)  
Former Asiatic USSR (57)  
Former European USSR (47)  
Former Soviet Central Asia (575)  
France. French Republic. République Française (44)  
Free State (685)  
French Guiana (Guyane française). Department of Guiana (France) (882)  
French Polynesia. Territory of French Polynesia. Territoire de la Polynésie Française (France) (963)

## G

Gabon. Gabonese Republic (672.1)  
Galápagos (866.4)  
Gambia. Republic of the Gambia (665.1)  
Georgia (735.8)  
Georgia. Republic of Georgia. Sakartvelo (479.22)  
Germany. Federal Republic of Germany (Bundesrepublik Deutschland) (430)  
Ghana. Republic of Ghana (667)  
Gibraltar (UK) (468.2)  
Greece. Hellenic Republic (495)  
Greenland (Gronland) (Denmark) (988)  
Guam (USA) (967.2)  
Guatemala. Republic of Guatemala (728.1)  
The Guianas (88)  
Guinea-Bissau. Republic of Guinea-Bissau (665.7)  
Guinea. Republic of Guinea (665.2)  
Guyana. Cooperative Republic of Guyana (881)

## H

Haiti. Republic of Haiti (729.4)  
Hawaii (739.9)  
Honduras. Republic of Honduras (728.3)  
Hong Kong, Special Administrative Region (512.317)  
Hungary. Hungarian Republic (439)

## I

Iberian peninsula (46)  
Iceland. Republic of Iceland (491.1)  
Idaho (739.6)

Illinois (737.3)  
India. Republic of India (540)  
Indiana (737.2)  
Indonesia. Republic of Indonesia (594)  
Inner African (central African) territories (674)  
Iowa (737.7)  
Iran. Islamic Republic of Iran. Persia (historical) (55)  
Iraq. Republic of Iraq (Al Jumhuriyah al 'Iraqiyah) (567)  
Ireland (geographical whole) (415)  
Ireland. Republic of Ireland. Eire (417)  
Island territories south of Japanese mainland (528)  
Islands north of Madagascar (694)  
Islas Baleares (460.32)  
Islas Canarias (Canary Islands), Spanish, as part of Africa (649)  
Isolated Islands of the Pacific Ocean (97)  
Israel. State of Israel (569.4)  
Italy. Republic of Italy. Repubblica Italiana (450)

## J

Jamaica (729.2)  
Japan. Nippon (Nihon Koku) (520)  
Jordan. Hashemite Kingdom of Jordan. Urdunn (569.5)

## K

Kaap die Goeie Hoop. Cape of Good Hope (historical) (687)  
Kansas (738.1)  
Kazakhstan. Republic of Kazakhstan (574)  
Kentucky (736.9)  
Kenya. Republic of Kenya (676.2)  
Kiribati. Republic of Kiribati (968.2)  
Kriti (Crete) (495.9)  
Kuriles (Chishima-retto) (to 1945) (527.1)  
Kuwait. State of Kuwait (536.8)  
KwaZulu/Natal (KwaZulu-Natal) (684)  
Kyrgyzstan. Republic of Kyrgyzstan (575.2)

## L

Laos. Lao People's Democratic Republic (598)  
Latvia. Republic of Latvia (474.3)  
Lebanon. Republic of Lebanon (569.3)  
Liberia. Republic of Liberia (666.2)  
Libya. Libyan Arab Jamahiriya (612)  
Liechtenstein. Principality of Liechtenstein (494.9)  
Lithuania. Republic of Lithuania (474.5)  
Litoral (821/822)  
Louisiana (736.3)  
Luxembourg. Grand Duchy of Luxembourg (435.9)

## M

Macedonia. Makedonija (497.17)  
Madagascar. Democratic Republic of Madagascar (691)  
Maine (734.1)  
Malawi. Republic of Malawi (689.7)  
Malaysia. Federation of Malaysia (595)  
Maldives. Republic of the Maldives (548.82)  
Mali. Republic of Mali (662.1)  
Malta. Republic of Malta (458.2)



Manitoba (712.7)  
Marshall Islands. Republic of the Marshall Islands (966.4)  
Maryland (735.2)  
Mascarene Islands (698)  
Massachusetts (734.4)  
Mauritania. Islamic and African Republic of Mauritania (661.2)  
Mauritius. Republic of Mauritius (698.2)  
Mexico. Central American states. Caribbean territories (72)  
Michigan (737.4)  
Micronesia. States and regions of Micronesia (966/968)  
Minnesota (737.6)  
Mississippi (736.2)  
Missouri (737.8)  
Moldova (478)  
Monaco. Principality of Monaco (449.49)  
Mongolia. State of Mongolia (517.3)  
Montana (738.6)  
Morocco. Kingdom of Morocco (64)  
Mozambique. Republic of Mozambique (679)  
Myanmar (Burma). Union of Myanmar (591)

## N

Namibia (688.1)  
Nauru. Republic of Nauru (968.5)  
Nebraska (738.2)  
Nepal. Kingdom of Nepal (541.35)  
Netherlands. Kingdom of the Netherlands. Koninkrijk der Nederlanden (492)  
Nevada (739.3)  
New Brunswick (715)  
New Caledonia. Territory of New Caledonia (France) (932)  
New Hampshire (734.2)  
New Jersey (734.9)  
New Mexico (738.9)  
New South Wales (944)  
New York (state) (734.7)  
New Zealand (931)  
Newfoundland Province. Newfoundland, Labrador (718)  
Nicaragua. Republic of Nicaragua (728.5)  
Niger. Republic of Niger (662.6)  
Nigeria. Federal Republic of Nigeria (669.1)  
North and Central America (7)  
North Carolina (735.6)  
North Dakota (738.4)  
North Korea. People's Democratic Republic of Korea (519.3)  
North Vietnam. Democratic Republic of Viet-Nam (to 1975).  
Northern Ireland (410.7)  
Northwest Territories (719.2)  
Norway. Kingdom of Norway (481)  
Nova Scotia (716)  
Nunavut (719.3)

## O

Ohio (737.1)  
Oklahoma (736.6)  
Oman. Sultanate of Oman (535)  
Ontario (713)  
Oregon (739.5)

## P

P'eng-hu Lieh-tao (Pescadores). Bokoto (529.8)  
Pakistan. Islamic Republic of Pakistan (Pakistan. Islam-i Jamhuriya-e Pakistan) (549.1)  
Panama. Republic of Panama (728.7)  
Papua New Guinea. Independent State of Papua New Guinea (954)  
Pennsylvania (734.8)  
Peru. Republic of Peru (85)  
Philippines. Republic of the Philippines (599)  
Poland. Polish Republic (438)  
Portugal. Portuguese Republic (469)  
Prince Edward Island (717)  
Puerto Rico. Commonwealth of Puerto Rico (USA) (729.5)

## Q

Qatar. State of Qatar (536.4)  
Quebec (714)  
Queensland (943)

## R

Regione della Sardegna (Sardinia) (450.88)  
Regione della Sicilia (Sicily) (450.82)  
Réunion (France) (698.1)  
Rhode Island (734.5)  
Romania. Republic of Romania (498)  
Russian Federation in Asia (571)  
Rwanda. Republic of Rwanda (675.98)

## S

Samoa. Independent State of Samoa (Samoa. Malo Sa'oloto Tuto'atasi o Samoa) (961.31)  
Saskatchewan (712.4)  
Saudi Arabia. Kingdom of Saudi Arabia (532)  
Scotland (410.5)  
Senegal. Republic of Senegal (663)  
Serbia and Montenegro (Srbija i Crna Gora) (497.11+497.16)  
Seychelles. Republic of Seychelles (696)  
Sibir'. Siberia (571.1/.5)  
Sierra Leone. Republic of Sierra Leone (664)  
Sikkim (540.31)  
Singapore. Republic of Singapore (592.3)  
Slovakia from 1992. Slovak Republic. Slovensko. Slovenská Republika (437.6)  
Slovenia. Slovenija to 1991 (497.12)  
Slovenia. Republic of Slovenia. Slovenija from 1991 (497.4)  
Solomon Islands (935)  
Somalia. Somali Democratic Republic (677)  
South Africa. Republic of South Africa (680)

South Australia and the Northern Territory (942)  
South Carolina (735.7)  
South Dakota (738.3)  
South Korea. Republic of Korea (519.5)  
  
South Vietnam. Republic of Vietnam (to 1975).  
Cochinchina (historical) (597.3)  
Spain. Kingdom of Spain. Reino de España (460)  
Srbija (Serbia) (497.11)  
Sri Lanka. Democratic Socialist Republic of Sri Lanka (548.7)  
Sudan. Republic of the Sudan (624)  
Suriname. Republic of Suriname (883)  
Swaziland (688.7)  
Sweden. Kingdom of Sweden (485)  
Switzerland. Swiss Confederation (494)  
Syria. Syrian Arab Republic (569.1)

## T

Taiwan (Formosa) (529.1)  
Taiwan. Republic of China (529)  
Tajikistan. Republic of Tajikistan (575.3)  
Tanzania. United Republic of Tanzania (678)  
Tasmania (946)  
Tennessee (736.8)  
Texas (736.4)  
Thailand. Kingdom of Thailand (593)  
Togo. Republic of Togo (668.1)  
Tonga. Kingdom of Tonga (961.2)  
Trinidad and Tobago. Republic of Trinidad and Tobago (729.87)  
Trust Territory of the Pacific Islands (USA) (966)  
Tunisia. Republic of Tunisia (611)  
Turkey. Republic of Turkey (560)  
Turkmenistan (575.4)  
Turks and Caicos Islands (UK) (729.68)  
Tuvalu (961.4)

## U

Uganda. Republic of Uganda (676.1)  
Ukraina. Ukraine (477)  
United Arab Emirates (536.2)

United Kingdom of Great Britain and Northern Ireland (410)

United States of America (USA) (73)  
Upper Guinea states and territories (665)  
Uruguay. Eastern Republic of Uruguay (899)  
Utah (739.2)  
Uzbekistan (575.1)

## V

Vanuatu. Republic of Vanuatu (934)  
Venezuela. Republic of Venezuela (87)  
Vermont (734.3)  
Victoria (945)  
Vietnam. Socialist Republic of Vietnam (597)  
Virginia (735.5)

## W

Wales (410.3)  
Washington (739.7)  
West Virginia (735.4)  
Western and southern Länder (430.1)  
Western Australia (941)  
Western Sudan and Niger Territories (662)  
Wisconsin (737.5)  
Wyoming (738.7)

## X

Xinjiang Uygur Zizhiqu. Sinkiang Uighur Autonomous Region (Chinese Turkestan) (516)  
Xizang Zizhiqu. Tibet Autonomous Region (515)

## Y

Yemen. Republic of Yemen, 1990- (533)  
Yugoslavia (Jugoslavija). Federal Republic of Yugoslavia -1991 (497.1)  
Yukon. Northwest Territories (719)  
Yukon Territory (719.1)

## Z

Zambia. Republic of Zambia (689.4)  
Zimbabwe. Republic of Zimbabwe (689.1)