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The Importation And Utility
Of Exotic Woods
In The United States

by
G. A. McArthur

an extended paper written in
partial fulfillment of the requirements
of plan B for the degree

Master Of Science
In
Education

Eastern Illinois University

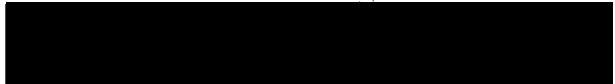
October, 1961

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Nov. 15, 1961
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Nov. 15, 1961
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I

THE PROBLEM

A

STATEMENT OF PROBLEM

"Wood is man's oldest, yet most modern material. Even in this age of synthetic and metallurgical miracles, fine hardwoods still enhance and serve innumerable needs of modern living as no other material can.

No longer may only the wealthy enjoy the natural beauty of fine woods. In our time, modern logging and production methods have brought these treasures of the forest within the reach of all."¹

Native woods, such as birch, cherry, maple, pine, oak, and walnut, to name a few, have been used in industrial arts courses for many years due to their availability and price.

With the advent of the first Sputnik, which the Russians placed into orbit, the educators of this country are placing more emphasis on science and mathematic courses than on the practical arts courses.

Today the industrial arts teachers must keep alert to the developments of new materials, tools, and techniques in fabricating such materials as wood, plastics, and metal. With such great expositions as the Brussel's World Fair and the complete day to day television, radio, and newspaper

¹Fine Hardwoods Associations, Fine Hardwoods Selectorama, 1951, 9.

coverage of events that happen all over the world an interest may be created for more knowledge of a country's natural resources and the part they may have in world trade.

It is a challenge for the teacher and the student to become more familiar with some of the foreign woods that are now being imported into the United States. Industrial arts teachers have at their disposal a larger variety of materials to work with than ever before. With modern transportation, distribution, and production methods it is possible to use products from all over the world at a competitive price.

Mr. Anthony W. Romweber, Jr. of Universal Equipment Company, manufactures of institutional furniture, was introduced to this writer during a Charleston Rotary Club luncheon at Eastern Illinois University Union Building. In the conversation that followed, Mr. Romweber stated that his company used over ninety different species of "Exotic Woods" in the manufacturing of their line of exclusive furniture.

The purpose of this study of "Exotic Woods" is to gather data to supply the answers to the following questions:

1. What kinds of woods are imported to the United States?
2. What is the color, grain, texture, and figure of the woods?
3. In what geographical regions are the woods grown?
4. What is the nature of the exported woods (rough or finished)?
5. What are the restrictions, if any to this trade (tariff)?

6. What is the intended use of the wood?

B

TERMS USED IN THIS STUDY

The terms appearing in this section are limited to those terms relevant to this particular study. In the lumbering industry today many of these terms may have additional meanings.

1. Color refers to the color of the wood from the center of the log to the sapwood.
2. Exotic Woods, as used in this study, refers to imported foreign woods, outside of continental United States, which have rather unique characters, not found in our own native woods.
3. Figure is the pattern produced in a wood surface by irregular coloration and by annual growth rings. Rays, knots, and such deviations from the regular grain as interlocked and wavy grain also contribute to the design of figure.
4. Flitches is to cut off in strips.
5. Geographical location is the general region or area where the "Exotic Wood" is grown.
6. Grain is the arrangement of fibers, layers, or particles of wood.
7. Intended use of the wood refers to the products that are made of the wood such as furniture construction, small articles, and building lumber.
8. Nature of the imported wood, as used in this study, refers

to the condition (rough or finished) of the wood as it comes into this country.

9. Practical Art Courses are courses designed for exploratory purposes as for students who wish to specialize in such fields as industrial arts, home economics, general agriculture, and business. Some educators are now listing driver education as a possibility in the practical art courses.
10. Projects, Construction, and Activity refers to the items the student makes.
11. Species are a variety of different woods.
12. Texture is the arrangement of the wood particles as to its structure.

SOURCES OF DATA AND METHODS OF INVESTIGATION

In seeking answers to the questions found in the statement of purpose, the writer first investigated the literature available in the Booth Library at Eastern Illinois University. There were only a limited number of books on "Exotic Woods." Some of them are Green Glory, by Richard St. Barbe Baker, Know Your Woods, by Albert Constantine Jr., and A Concise Encyclopedia of World Timbers, by F. H. Titmuss.

Since the study deals with "Exotic Woods," a method had to be devised to gather information from foreign countries that export lumber to this country. It was decided that the author would use the Official Directory of Rotary International to obtain names and addresses of persons in other countries who might supply the necessary data. A pilot study was launched with correspondences being sent to five presidents of local Rotary International Clubs in five geographical locations asking for information, wood samples, and statistics with particular interest in species of wood exported, nature of the exported wood (rough or finished), intended use of the

wood, volume of the shipments, to whom the shipments are directed, and restrictions, if any, to this trade.

After receiving information from two of the five countries of the pilot study, it was decided by the writer to send out correspondence to ten additional geographical locations.

The addresses of the United States correspondence were secured through business contacts, catalogs, and personal contacts made at the exhibit booths of the Illinois Vocational Association Convention held at St. Louis, Missouri, in March, 1961.

In the United States letters were written to lumber companies, school supply companies, and a forest products laboratory requesting information on the importation and utility of "Exotic Woods."

To obtain "first hand" information on what some of the Industrial Arts woodworking teachers of Illinois are doing in the utilization of "Exotic Woods," the suggestion was made that a question type of survey be conducted.

The questions were to be based on the utility of foreign woods to obtain original and up-to-date facts on how "Exotic Woods" were being used over the state of Illinois in junior high, high school, and college industrial arts courses.

Questionnaires were distributed among fifty woodworking teachers attending the Illinois Vocational Association

Convention, to obtain information as to what "Exotic Woods" are most frequently used in their classes, how they were introduced to the different kinds of foreign woods, their supply sources, and the grade level and types or size of projects in which "Exotic Woods" are used.

A copy of the Woodworking Teacher's Survey questionnaires has been included in the appendix on page 53.

II

THE EXOTIC WOODS

II

THE EXOTIC WOODS

"The largest collection of woods in the world is Yale University's Samuel James Record Memorial Collection. Here are housed over 52,000 specimens of wood. More than 240 plant families are represented in this collection, each possessing some woody species."²

It is certainly beyond the scope of this paper to include even a small fraction of the vast "Exotic Woods" imported into this country. Only one wood was selected to be described in detail to indicate the volume of information available on a specific wood.

The chart in this chapter has been compiled to show the exotic wood selections, as to their color, grain, texture, figure, geographical location, nature of the exported wood, restriction to trade, and the intended uses of the wood.

Agba or Tola wood was the first wood listed in the thirty-six leaflets received from the Forest Products Laboratory in Madison, Wisconsin. The limited number of "Exotic Woods" listed in the chart is not assumed to be a complete list of "Exotic Woods" imported into the United States each year.

²Albert Constantine Jr., Know Your Woods, Home Craftsman Publishing Corporation, 1959. XVI p.

EXOTIC WOODS

Color

1. Agba (Tola)	Yellowish-pink to cedar Brown	Strai
2. Albarco (Bacu)	Reddish - or purplish Brown	Strai inter
3. Alerce	Reddish-Brown	Strai
4. Amburana (Cerejeira, Cumaru De Cheiro, Roble Del Norte)	Yellowish or light Brown	Strai
5. Angelique	Dull Brown Grayish White	Strai inter
6. Azobe (Bongossi, Ekki)	Dark red to Wine	Typic inter
7. Balsa	White Yellowish	Strai irreg
8. Brazilian Araucaria (Parana Pine)	Yellowish Red	Strai
9. Cativo	Pinkish Black	Strai
10. Conacaste (Guanacaste)	Black - White	Some fuzzy
11. Courbaril	Gray - Bright Red	Strai inter
12. Crabwood	Reddish-Brown to Brown	Strai inter
13. Degame (Lemonwood)	Yellow- Brownish	Usual to ir
14. Espave (Espavel Caracoli, Quina)	Gray-Reddish Brown	Inter layer
15. Greenheart	Light to dark olive-greenish	Fine
16. Imbuia (Embuia, Brazilian Walnut)	Yellowish- Brown	Strai curly
17. Ipe' Peroba (Peroba Do Campo)	Yellowish Red	Varia inter
18. Klinki (Rassu, Pai)	Purplish - straw - colored	Even
19. Koa (Koa - Ka)	Red - Brown	Strai
20. Lamog	Light-Reddish Brown	Cross grain
21. Lauans	Red-Reddish	Inter

EXOTIC WOODS

1. Agba (Tola)
2. Albarco (Bacu)
3. Alerce
4. Amburana (Cerejeira, Cumaru De Cheiro, Roble Del Norte)
5. Angelique
6. Azobe (Bongossi, Ekki)
7. Balsa
8. Brazilian Araucaria (Parana Pine)
9. Cativo
10. Conacaste (Guanacaste)
11. Courbaril
12. Crabwood
13. Degame (Lemonwood)
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16. Imbuia (Embuia, Brazilian Walnut)
17. Ipe' Peroba (Peroba Do Campo)
18. Klinki (Rassu, Pai)
19. Koa (Koa - Ka)
20. Lamog
21. Lauans

Color	Grain	Texture	Figure
Yellowish-pink to cedar Brown	Straight Ribbon	Rather close	Attractively
Reddish - or purplish Brown	Straight or interlocked	Medium	Attractively
Reddish-Brown	Straight	Fine and uniform	The growth rings tend to be narrow
Yellowish or light Brown	Straight to irregular	Coarse, not uniform	Attractively
Dull Brown Grayish White	Straight or slightly interlocked	Medium	Attractively
Dark red to Wine	Typically interlocked	Medium to coarse and hard	Uneven
White Yellowish	Straight and irregular	Uniform	Attractively
Yellowish Red	Straight and knotty	Rather close	Attractively
Pinkish Black	Straight	Uniform	Subdued
Black - White	Some rough and fuzzy surfaces	Rather close	Attractively
Gray - Bright Red	Straight and interlocked	Medium to rather coarse	Presently
Reddish-Brown to Brown	Straight and interlocked	Medium-coarser	Resembling - Afr Mahogany
Yellow-Brownish	Usually straight to irregular	Fine and uniform	Attractively
Gray-Reddish Brown	Interlocked in layers	Medium	Growth-rings pattern
Light to dark olive-greenish	Fine and smooth	Fine and uniform	Attractively
Yellowish-Brown	Straight - some curly and wavy	Fine	Attractively
Yellowish Red	Variable (straight-interlocked)	Medium	Beautifully
Purplish - straw - colored	Even and compact	Uniform	Whorls and klink
Red - Brown	Straight-twisted	Uniform	Curly
Light-Reddish Brown	Cross and curly grain	Fine to moderately coarse	Curly
Red-Reddish Brown	Interlocked	Rather close	Ribbon

Color

Grain

Texture

Figure

Color	Grain	Texture	Figure
Yellowish-pink to cedar Brown	Straight Ribbon	Rather close	Attractively
Reddish - or purplish Brown	Straight or interlocked	Medium	Attractively
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Pinkish Black	Straight	Uniform	Subdued
Black - White	Some rough and fuzzy surfaces	Rather close	Attractively
Gray - Bright Red	Straight and interlocked	Medium to rather coarse	Presently
Reddish-Brown to Brown	Straight and interlocked	Medium-coarser	Resembling - African Mahogany
Yellow-Brownish	Usually straight to irregular	Fine and uniform	Attractively
Gray-Reddish Brown	Interlocked in layers	Medium	Growth-rings pattern
Light to dark olive-greenish	Fine and smooth	Fine and uniform	Attractively
Yellowish-Brown	Straight - some curly and wavy	Fine	Attractively
Yellowish Red	Variable (straight-interlocked)	Medium	Beautifully
Purplish - straw - colored	Even and compact	Uniform	Whorls and klinki
Red - Brown	Straight-twisted	Uniform	Curly
Light-Reddish Brown	Cross and curly grain	Fine to moderately coarse	Curly
Red-Reddish Brown	Interlocked	Rather close	Ribbon

Geographical Location	Nature of the Restriction Exported Wood to Trade	Intended Use of the Wood
England, Nigeria		Flooring, treads panelling
Loba, Columbia		Heavy planking shipbuilding
Kew Great Britain		Floors, roofing, pencils, boxes
Northeastern Argentina		Furniture, crating, window frames
French Guiana Surinam	Gris and rouge types	Heavy construction, boat frames
West Africa		Heavy construction, railway ties
Mexico, West Indies, Central America		Lumber, life-saving equipment
Brazil		Matches, paper pulp, veneer, shingles
Nicarogua, Columbia Jamaica	Logs and sawed lumber	Interior trim, furniture cabinet parts, plywood
Mexico		Panelling, interior trim cabinet work
British Guiana Mexico		Ship planking, machinery parts, furniture
West Africa, West Indies Peru, Brazil		Plywood, flooring, furniture
Cuba, Central America	Slender logs	Archery Bows fishing rods
Panama Costa Rica		Dishes, inexpensive furniture, millwork
Venezuela		Marine construction fishing rods
Parana, Argentina, Santa Catharina		Fine furniture, gun stocks
Rio de Janeiro		Ship timbers
New Guinea Papua		Veneer, patterns, matches
Isle of Hawaii Australia		Musical instruments, furniture, cabinet work
Philippine Islands, Burma, New Buinea		Furniture
Philippine Eslands Maylay States	Rough logs; lumber finished rough	Furniture, cabinets

EXOTIC WOODS

22. Mancono (Philippine Lignumvitae, Philippine Iron Wood)
23. Manbarklak
24. Musizi
25. Planetree Maple (Sycamore Maple)
26. Palosapis
27. Pochote
28. Primavera
29. Pyinkado (Pyingado)
30. Cdoko
31. Chia Lehua
32. Quebracho (Quebracho Colorado, Quebracho Macho)
33. Sen
34. Spanish Cedar
35. Teak
36. Toon (Burma Cedar, Moulmein Cedar, Thitkado)

Color	Grain	Texture	Figure
Light Brown	Cross-grained	Fine	Twisted or wavy
Gray Red Brown	Straight	Fine	
Yellow-green dark Brown	Medium to fairly coarse		Straight
Whitish-light Brown	Straight, curly grain	Close, uniform	Fine, ruple
Light Yellow	Interlocked, ribbon	Coarse	
Reddish Brown Yellowish	Straight	Coarse	
Whitish to Straw-Yellow	Interlocked	Rather close	
Yellow-light Brown	Straight	Medium	
Pale Yellow Straw	Straight	Fine	Silver-grain
Light Gray Yellowish	Straight	Fine	Curly
Light Red Yellowish	Interlocked	Fine, uniform	Narrow stripe
White-pale Yellowish brown	Straight	Medium	
Reddish Brown Purplish Tinge	Straight, interlocked	Medium	Attractively
White Black	Straight	Coarse uneven	
Brick Red Reddish Brown	Straight, interlocked	Moderately coarse	Distinct growth rings

Geographical Location	Nature of the Exported Wood	Restriction to Trade	Intended Use of the Wood
Philippine Islands New Guiana			Bowling balls, tool handles
British Guiana			Marine construction
East Africa Congo	Construction furniture		Interior work
Europe, Western Asia			Veneer, sculpture spools, bobbins
Britain			House construction, ship planking, cabinets
Venezuela, Columbia Central America		Only a small supply trees	Tanning vats, boxes
Mexico El Salvador			Cabinet wood, veneer, furniture
Burma			Tool handles, tent pegs, boatbuilding
Liberia Southern Nigeria			Table top, domestic wooden ware
New Zealand Hawaiian			Hardwood flooring, house trim
Spain, Europe, Argentina Western Paraguay			Tannin extract
Japan, China, Korea Manchuria			Furniture, plywood
Central America South America (except Chile)			Rotary veneer musical instruments
India, Burma, Thailand (Siam) French Indo-China, Java	Sawed lumber log form	Government restriction	Furniture, carvings
Spain-India Philippines			Carving, pattern making, brush handles

Agba or Tola

Agba, or tola, is known by a considerable number of local names. It occurs in West Africa in Central Province, Southern Nigeria, Benin Province, and Owerri, and also in Belgian and Portuguese Congo. It is a fast-growing, light-loving tree, favoring deep soil with plenty of moisture.

The Tree

Size and Shape

Agba is a large tree, one of the dominant species, occurring in the rain forests. The trunk is cylindrical and free from buttresses. Trees may be clear of branches higher than 100 feet.

The Bark

The bark is thin, grayish, and smooth and often shows spiral twisting.

Gum

If a tree trunk is wounded or notched, a thick gum or oleoresin exudes, which then hardens into large lumps. This gum is often sold in Africa, where it is used as an illuminant and for other purposes. Exudations may make the surfaces of fresh-cut wood somewhat gummy, so that boards will stick together. The gum also causes trouble by exuding when the wood is heated to high temperatures.

The Wood

Color

Agba is a plain light-colored timber. There is little difference in color between the sapwood and the heartwood, which tends to be slightly darker. The general color is yellowish-pink to reddish or cedar-brown.

Weight

Seasoned wood is reported to weigh about 30 to 35 pounds per cubic foot (in the neighborhood of pine or Douglas fir.)

Grain, Texture, and Luster

The timber is usually straight-grained. Texture is rather close, somewhat resembling mahogany but less lustrous.

Durability

Agba is classed as resistant to decay, but it may be attacked by pinhole borers. Sapwood is attacked by powder-post beetles. It is said to be resistant to termites in Nigeria. It does not take preservation treatment well.

Seasoning

The wood seasons without warping or undue checking whether air-dried or kiln-dried. At high temperatures the gum contained in it may melt and exude on the surfaces of boards, which may even stick together unless separated by stickers.

Working Characteristics

Agba is easily worked with hand and machine tools. A slight dulling of cutting edges may be noted. The gum previously mentioned sometimes causes saws to stick. The wood finishes, stains, polishes, and glues well and holds nails and screws satisfactorily. It holds sharp edges well in moulding, mortising and tenoning. Sliced veneer has been produced; it is said to be "milder to work" than Honduras mahogany.

Uses

Agba is considered suitable for joinery and constructional work, interior fittings, flooring, treads, furniture, linings, and panelling. It is obtainable in large sizes, free from defects, and is gaining in popularity.

Supplies

There are believed to be ample supplies available. Squared logs 20 to 30 inches on a side have been available in England, and 18 foot lengths have been reported. Round logs tend to develop end splits.³

³
Forest Products Laboratory Forest Service, "Agba or Tola," Information Leaflet Foreign Woods, 1955.

III

WOODWORKING TEACHER'S SURVEY

III

WOODWORKING TEACHER'S SURVEY

With the approaching Illinois Vocational Association Convention to be held March 2-4, 1961, in St. Louis, Missouri, it appeared to be an ideal situation for conducting a survey on the utilization of "Exotic Woods" by woodworking teachers at attending the convention.

This survey was conducted at the I. V. A. Convention to obtain information as to what exotic woods are most frequently used in the instructors' courses. The questionnaires were passed out to fifty woodworking teachers attending the convention of which there were twenty-three returned. Out of these twenty-three instructors only fourteen of them were using exotic woods.

There were eighteen different exotic woods listed in the survey. They are listed in order as to the most frequently used:

- | | | |
|-------------|-----------|--------------|
| 1. Mahogany | 4. Padauk | 7. Samara |
| 2. Limba | 5. Luna | 8. Rosewood |
| 3. Korina | 6. Emeri | 9. Aformosia |

- | | | |
|-----------------|----------------|----------------|
| 10. Myrthlewood | 13. Kalo | 16. Zlbrawood |
| 11. Cocobolo | 14. Romin | 17. Prima Vera |
| 12. Teak | 15. Blardehuan | 18. Afromisia |

There were several different ways in which the instructors were first introduced to the new woods: through college courses, lumber salesman, lumber displays at conventions, and personal research were among the answers received on the questionnaire.

The following is a list of lumber suppliers and addresses compiled from the reports of the participating teachers:

1. Ben Miller Lumber Co., 7400 St. John Ave.,
Kansas City, Missouri.
2. Brodhard Garrett Co., 4560 East 71 Street,
Cleveland 5, Ohio.
3. V. F. Christman, 2820 North 2nd Street,
St. Louis 7, Missouri.
4. Frank Paxton Lumber Co., 5701 West 66 Street,
Chicago 38, Illinois
5. T. A. Foley, Paris, Illinois.

The grade levels covered in this survey ranged from junior high to college, of which none of the six junior high instructors used exotic woods; all but three of the sixteen instructors of the high school grade level are using exotic woods; and the one college instructor uses several different kinds of exotic woods.

The type and sizes of constructions varied from school to school. Some of the small constructions were trinkets, book ends, wood carvings, wall clocks, and shelves. The medium sized constructions included coffee tables, desk, and hutch cabinets, while the larger constructions were room dividers, bedroom furniture, and kitchen cabinets.

A copy of the Woodworking Teacher's Survey Questionnaire, a map showing Distribution of Participants by Town, and a Woodworking Teacher's Survey Summary are included in the appendix.

IV

REPORTS ON THE
UNITED STATES AND FOREIGN
CORRESPONDENCE

IV

UNITED STATES CORRESPONDENCE

In writing to selected lumber dealers, school supply companies, and the forest products laboratory of Madison, Wisconsin, information concerning the exotic woods that they processed was obtained.

Brodhard Garrett Company sent their equipment and supplies catalog, which contained a few "Exotic Woods" in the listings.

Mr. Harold L. Mitchell, Chief of the United States Department of Agriculture, Forest Service, Forest Products Laboratory, Madison 5, Wisconsin, sent thirty-six Foreign Woods Leaflets which were of great value in writing this paper.

Mr. E. E. Kindt, Vice President of the Kindt-Collins Company, Cleveland 11, Ohio, wrote that they supply pattern lumber to the pattern industry. Both Mahogany and Corisa are being imported from Brazil, Peru, and Central America. Mahogany tends to be a hardwood while Corisa is a softwood. However, both are graded according to Hardwood Grading Rules. Mahogany is generally used in semi-production patterns, whereas Corisa is a substitute for Pine and is used where only a few castings are made.

Mr. Ben Miller, president of the Ben Miller Lumber Company wrote that since their information had been collected from several sources, it would be best to contact them individually and sent the necessary addresses.

Frank Paxton Lumber Company's catalog listed eleven "Exotic Woods" that they sell. They are Afrormasic (African Teak), Guino (South American), Korina (Belgian Congo), Mahogany (African and Philippine), Sapele (African), Tigerwood (African), Teak (Siamese), Rosewood (Brazilian and Indian), Balsa, Ebony, and Padauk.

United States Plywood Corporation wrote that they sold many "Exotic Woods" in the form of plywood.

Due to the limited amount of information obtained in this area and the need for more authentic research materials from the direct source, letters were sent to foreign countries.

FOREIGN CORRESPONDENCE

To realize the magnitude of this study of exotic woods there are enclosed copies of each letter sent to the fifteen foreign countries listed in the appendix.

On December 30, 1960, five letters were sent in a pilot study. These letters were sent to the following countries: Columbia, India, Africa, Japan, and England.

January 17, 1961, Mr. Gabriel del Corral of Cartagena, Columbia, South America, wrote that his business was logging and veneer production and that he would be glad to forward the information requested.

On January 28, 1961, ten more letters were sent to the following: Mexico, Hawaii, Venezuela, Africa, Brazil, Argentina, Belgium, Burma, Panama, and the Philippines.

Mr. Paul H. Anderson of Honolulu 4, Hawaii, wrote on February 17, 1961 that he was sending the information requested.

On May 24, 1961, Mr. Anderson wrote that very little in the way of wood products are exported from Hawaii. For example, in 1958 there were about 300,000 board feet of Acacia Koa (Koa) and 400,000 board feet of Samanea Saman

(Monkey Pod) harvested. Probably less than half of the Koa was exported as lumber, furniture, or craft products. Most of the Monkey Pod was manufactured locally into craft products which for the greater part were sold to tourists.

On March 20, 1961, Mr. Jose M. Barredo, Sr., of Manila, Philippines, sent the information requested. He stated that the following woods were exported to the United States: Red Launa, White Launa, Mayapis, Almon, Tangila, Tiaong, and Bogtikan. The nature of these exported woods were rough logs, lumber, finished and rough. The logs were used for veneer and plywood factories, lumber for furniture, boatbuilding, panelling, flooring, molding, etc. In the year 1960, 17,154,591 logs (in board feet) were exported to the United States. The logs were shipped to veneer and plywood factories in the Pacific Coast, Gulf States, and Eastern Seaboard, lumber - directed to distributors and end users. He also stated that he was not aware of any tariff imposed on Philippine log and lumber shipments to the United States.

On May 15, 1961, Mr. Harry C. Willis of Panama advised that the main woods exported to the United States are Mahogany and Spanish Cedar; Mahogany is exported from Panama in both log form and sawed lumber; small amounts of flitches are also exported to the United States.

Approximately 1,500,000 feet of Mahogany logs and 200,000 feet of sawed lumber are shipped to the United States yearly. There are no restrictions on the importation of Mahogany.

The amount of Spanish Cedar which has been shipped to the United States recently would not amount to over 75,000 feet in both logs and sawed lumber form.

Mr. Willis stated in his letter that during the Second World War his firm shipped large quantities of Santa Maria logs to the Higgins Company of New Orleans, Louisiana, with the understanding that they were to be used in the construction of P. T. boats.

A convenient reply card was received from Jose Martins d'Alvarez of Rio de Janeiro, Brazil, on August 21, 1961. He was unable to supply the necessary information and would forward the material to:

Oswaldo Benjamin de Azevedo
Av. Rio Branco, 85 - 14^o
Rio de Janeiro - GB
Brazil

SUMMARY AND CONCLUSION

SUMMARY AND CONCLUSION

"Wood is man's oldest, yet most modern material. Even in this age of synthetic and metallurgical miracles, fine hardwoods still enhance and serve innumerable needs of modern living as no other material can.

No longer may only the wealthy enjoy the natural beauty of fine woods. In our time, modern logging and production methods have brought these treasures of the forest within the reach of all."⁴

Native woods have been used in industrial arts courses for many years, but today the industrial arts teachers must keep alert to the developments of new materials and tools that are now being sold.

With modern transportation, distribution, and production methods, it is possible to use products from all over the world.

There are numerous kinds of "Exotic Woods" such as Agba, Koa, Monkey Pod, Almon, and Mayapis imported into the United States each year. These woods are used in furniture pattern making, veneers, cabinets, spools, bobbins, boxes, boat building, flooring, house trim, musical instruments, brush

⁴ Fine Hardwoods Association, Fine Hardwoods Selectorama, 1951, 9.

handles, carvings, and industrial arts constructions.

The purpose of this study of "Exotic Woods" has been to gather data on: what kinds of woods are imported to the United States; what is the color, grain, texture, and figure of the woods; in what geographical regions are the woods grown; what is the nature of the exported woods (rough or finished); what are the restrictions, if any, to this trade (tariff); and what is the intended use of the wood.

In seeking answers to the questions, the writer first investigated the literature available in the Booth Library. Since this study deals with "Exotic Woods", a method was devised to gather information from foreign countries by means of correspondences to companies that export lumber to the United States.

In the United States letters were written to lumber companies, school supply companies, and a forest products laboratory requesting information on the importation and utility of "Exotic Woods."

To obtain first hand information on what some of the industrial arts woodworking teachers of Illinois are doing in the utilization of "Exotic Woods," the suggestion was made that a question type of survey be conducted.

According to the woodworking teacher's survey all but three of the sixteen instructors of the high school grade

level are using exotic woods; one college instructor uses several kinds of exotic woods; and the six junior high school teachers did not use exotic wood in their class work. The sizes of construction varied from small trinkets to coffee tables and kitchen cabinets.

As years go by the world distances tend to become smaller, and what today may be considered an unusual exotic wood may in the future be as familiar to the industrial arts instructors as their own native woods.

Appendix

- A. United States Correspondence
- B. Foreign Correspondence (Pilot Study)
- C. Foreign Correspondence (Survey)
- D. Copy of Woodworking Teacher's Survey Questionnaire
- E. Distribution of Participants by Towns
- F. Woodworking Teacher's Survey Summary
- G. Selected Bibliography

UNITED STATES CORRESPONDENCE

UNITED STATES CORRESPONDENCE

1. Brodhard Garrett Company
4560 East 71st Street
Cleveland 5, Ohio
2. Forest Products Laboratory
Madison 5,
Wisconsin
3. Hardward Association of America
Asheville,
North Carolina
4. Huss Lumber Company
1350 West Fullerton Avenue
Chicago, Illinois
5. Kindt-Collins Company
12653 Elmwood Avenue
Cleveland 11, Ohio
6. Ben Miller Lumber Company
7400 St. John Avenue
Kansas City, Missouri
7. Frank Paxton Lumber Company
5701 West 66th Street
Chicago 38, Illinois
8. United States Plywood Corporation
Weldwood Building
55 West 44th Street
New York 36, New York

FOREIGN CORRESPONDENCE

PILOT STUDY

A CONVENIENT REPLY

Here is a sample of the post card that was enclosed with each foreign correspondence, which was meant to be a convenient way for them to reply.

Date _____

Dear Sir,

- () If you are able to supply us with the information requested please check the space at the left, fill in the below address and return this card.
- () If you are unable to supply the information please check the space at the left and indicate below the address of someone you have forward the material to. Thank you.

Address _____

924 Sixth Street
Charleston, Illinois
U.S.A.

December 28, 1960

Mr. Paul Wauters
c/o Rotary Club
Hotel Victory Palace
Pointe-Noire
Republic of Oongo
Africa

Dear Fellow Rotarian:

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Musizi.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
6. Restriction if any, to this trade (tariff).

In the event no one from your club can supply us with the above information, would you please forward it to someone who can.

Please fill out and return the enclosed post card.

The Charleston Rotary Club sends your club their best wishes and friendship for the coming new year.

Thank you for any information and material that you might be able to send us.

Yours truly,

GAMcA:fd

G. A. McARTHUR
Rotarian

Enc.

924 Sixth Street
Charleston, Illinois
U.S.A.

December 28, 1960

Enrique Esteban
c/o Rotary Club
Aeroo 1166
Cartagena Bolivar
Columbia

Dear Fellow Rotarian:

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Albarce Bacu, Balsa, Cative, Degame, Pochete, Spanish Cedar.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
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Yours truly,

GAMca:fd

G. A. McARTHUR
Rotarian

Enc.

924 Sixth Street
Charleston, Illinois
U.S.A.

December 28, 1960

Jos. C. Green
c/o Rotary Club
Hammonds of Daybrook
Mansfield Road
Daybrook, Notts
England

Dear Fellow Rotarian:

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Agba, Alerce, and Palesapis.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
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Yours truly,

GAMcA:fd

G. A. McARTHUR
Rotarian

Enc.

924 Sixth Street
Charleston, Illinois
U.S.A.

December 28, 1960

P. N. Elhiraj
c/o Rotary Club
167 Broadway
Madras 1
India

Dear Fellow Rotarian:

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Toon.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
6. Restriction if any, to this trade (tariff).

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Yours truly,

GAMcA:fd

G. A. McARTHUR
Rotarian

Enc .

924 Sixth Street
Charleston, Illinois
U.S.A.

December 28, 1960

Mr. Tesie Shiohara
c/o Rotary Club
757 Maruneuchi Building
Ohiyeda-ku
Tokyo, Japan

Dear Fellow Rotarian:

SUBJECT: Exotic Woods

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1. Kinds of woods exported to the United States. Example: Sen.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
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Yours truly,

GAMcA:fd

G. A. McARTHUR
Rotarian

Enc.

FOREIGN CORRESPONDENCE

SURVEY

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

Michel Jean-Louis
c/o Rotary Club
Post Office Box 1653
Accra
Ghana
Africa

Dear Fellow Rotarian,

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example; Crabwood, Azobe, Odoko, Angelique, Manbarklak and Klinki.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
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Yours truly,

G. A. McARTHUR
Rotarian

Enc.

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
c/o Rotary Club

[REDACTED]
c/o piso
Buenos Aires, C.F.
Argentina

Dear Fellow Rotarian,

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information wood samples and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example; Amburana, Imbuia and Quebracho.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
6. Restriction if any, to this trade (tariff).

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Yours truly,

G. A. McARTHUR
Rotarian

Enc.

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
c/o Rotary Club
Hotel Metropole
Bruxelles
Belgium

Dear Fellow Rotarian,

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example; Planetree Maple.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
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Yours truly,

G. A. McARTHUR
Rotarian

Enc.

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
[REDACTED]
c/o Rotary Club
[REDACTED] [REDACTED] [REDACTED]
[REDACTED]

Rio de Janeiro
Guanabara
Brazil

Dear Fellow Rotarian:

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Brazilian Araucaria.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
6. Restriction if any, to this trade (tariff).

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Yours truly,

G. A. McARTHUR
Rotarian

Enc.

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
c/o Rotary Club
c/o Royal Dio High School
85th Street
Mandalay
Burma

Dear Fellow Rotarian;

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Pyinkado and Teak.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
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G. A. McARTHUR
Rotarian

Enc.

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
c/o Rotary Club
Post Office Box 459
Zone 9
Honolulu, Oahu
Hawaii

Dear Fellow Rotarian:

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Koa and Ohia Lehoa.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
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G. A. McARTHUR
Rotarian

Enc.

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
c/o Rotary Club
[REDACTED]

Mexico 6
Mexico City, Mexico

Dear Fellow Rotarian,

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Primavera, Ipe Peroba, Courbaril, and Conacaste.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
5. To whom are the shipments directed?
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Yours truly,

G. A. McARTHUR
Rotarian

Enc.

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
c/o Rotary Club
[REDACTED]
Panama City
Panama

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We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Espave.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
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Rotarian

Enc .

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
[REDACTED]
c/o Rotary Club
Post Office Box 3172
Manila
Philippines

Dear Fellow Rotarian:

SUBJECT: Exotic Woods

We are preparing a brochure at Eastern Illinois University concerning, "The Importation and Utility of Exotic Woods in the United States."

We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

1. Kinds of woods exported to the United States. Example: Mancone, Lamog and Lauans.
2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
4. Volume of the shipments.
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Enc.

[REDACTED]
Charleston, Illinois
U.S.A.

January 25, 1961

[REDACTED]
c/o Rotary Club
[REDACTED]
Caracas
Venezuela

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We are interested in receiving any information, wood samples, and statistics that you might be able to furnish us. We are particularly interested in the following:

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2. Nature of the exported wood (rough or finished).
3. Intended use of the wood.
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Enc.

COPY OF WOODWORKING

TEACHER'S SURVEY

QUESTIONNAIRE

I.V.A. CONVENTION

Woodworking Teacher's Survey

March 2-4, 1961

Subject; EXOTIC WOODS

I. What "Exotic Woods" have you used in your classes? (The words "Exotic Woods" as used in this study refers to imported foreign woods, outside of continental United States, which have unique characters, not found in our own native woods.)

II. In what way were you introduced to the different kinds of Exotic Woods?

III. List the name and address of the suppliers of the Exotic Woods you use.

_____	_____	_____
_____	_____	_____
_____	_____	_____

IV. What grade level of students do you teach?

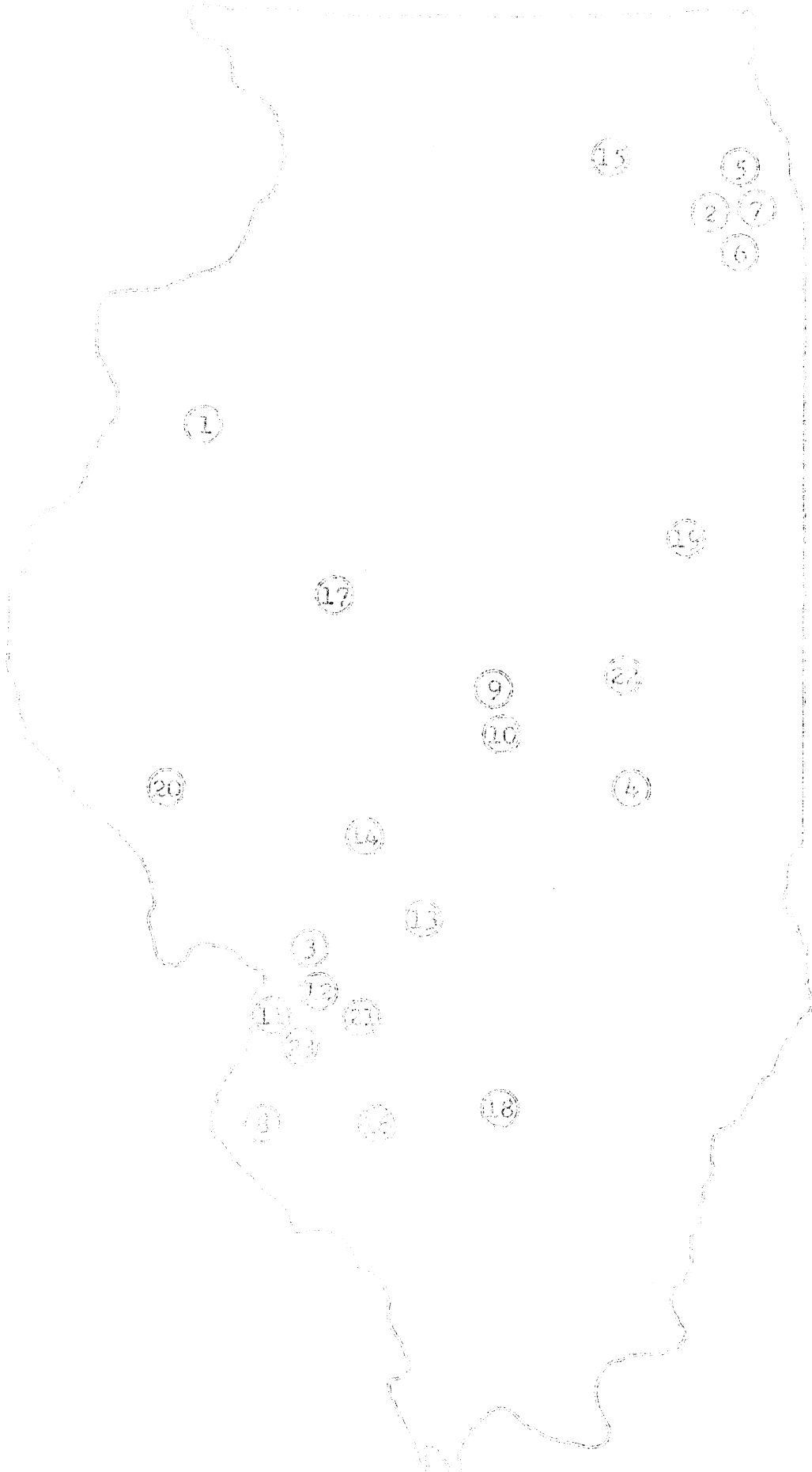
V. What types or size of projects do you use Exotic Woods?

Name: _____
School Address: _____

DISTRIBUTION OF PARTICIPANTS

BY TOWNS

Distribution of Participants by Towns



WOODWORKING TEACHER'S

SURVEY SUMMARY

Woodworking Teacher's Survey Summary

Map
Location

	Town	School	Teacher
1.	Abingdon	High School	Clayton T. Hurlbutt
2.	Bensenville	Blackhawk Jr. High	John A. Swanson
3.	Bethalto	Civic Memorial High School	Edward Hartweger
4.	Charleston	Eastern Illinois University	Dr. Ewell W. Fowler
5.	Chicago	Harper High School	R. J. Slaroson
6.	Chicago Hgts	Bloom Township High	C. W. Hubacek
7.	Cicero	J. Sterling Morton High	Ron Hughes
8.	Columbia	High School	Wayne B. Challacombe
9.	Decatur	Johns Hill Jr. High	Harold Wilkoy
10.	Decatur	Woodrow Wilson	Robert Mawrice
11.	Granite City	Prother Jr. High	Donald Ridlen
12.	Granite City	Prother Jr. High	Jerry Ethridge
13.	Greenville	Bond County Community #2 High	Charles Ireland
14.	Litchfield	High School	J. B. Garonflo, Jr.
15.	Maple Park	Kaneland Jr.-Sr. High School	Harvey L. Bos
16.	Mascoutah	Junior High	Frank R. Pitol
17.	Morton	Morton Twp. High	A. L. Zwanzig
18.	Mt. Vernon	Twn. High	Earl E. Stelzer
19.	Paxton	High School	James Reeder
20.	Pittsfield	High School	Walter J. Pippin
21.	Trenton	High School	Maurice Elmore
22.	Tuscola	High School	Gene Maloney
23.	Venice	High School	K. D. Rankin

**SELECTED
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SELECTED BIBLIOGRAPHY

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