

ISTITUTO IDROGRAFICO DELLA REGIA MARINA



THE ITALIAN HYDROGRAPHIC INSTITUTE

BY DIRECTOR J. M. PHAFF

THIS Institute originated in the UFFICIO CENTRALE SCIENTIFICO, which was established at LEGHORN in 1865. Besides furnishing to the Royal Italian Navy all scientific information required, this Ufficio was intended to assist seamen in every way and to promote the study of subjects which are closely allied to navigation.

This mandate included in the first place a maritime Coast Survey and for this purpose the COMMISSIONE IDROGRAFICA was appointed in 1867 under the direction of Captain ANTONIO IMBERT. This Commission was composed of a limited number of officers of the Royal Navy and had at its disposal a paddle corvette *Mozambano*, which collaborated in Venetian waters with the Imperial Austro-Hungarian Navy.

The charts which resulted from the surveys were distributed by the UFFICIO SCIENTIFICO DEL 1° DIPARTIMENTO MARITTIMO at GENOA to which body were also entrusted the Meteorological and Magnetic Services.

However, this institution was not the first to publish Italian charts.

If those which have appeared in earlier times, when Italian Cartography was famous for its accuracy and beautiful execution, be not considered, the publication of charts commenced in 1825. A chart of the Adriatic Coast from the river TRONTO to S. MARIA DI LUCA was published in that year by the ISTITUTO CARTOGRAFICO NAPOLETANO; and the SCUOLA DI CARTOGRAFIA, at MILAN, issued a general coast chart of the ADRIATIC from surveys by Italian Naval Officers.

The ISTITUTO TOPO-IDROGRAFICO NAPOLETANO continued the survey of the roads and ports of the KINGDOM OF THE TWO SICILIES and the Sardinian Navy published an "Album" of the coasts of SARDINIA and LIGURIA.

On the suppression of the Central Scientific Office of LEGHORN in 1872, the Genoese Office, Ufficio Scientifico del 1° Dipartimento Marittimo which had its seat as GENOA in the old fort of ST. GIORGIO, assumed the title of UFFICIO CENTRALE IDROGRAFICO DELLA R. MARINA and was placed under the direction of Commander GIOVANNI BATTISTA MAGNAGHI.

Under his superintendence an astronomical and magnetic observatory and a time signal were established at the Office, chart engraving on copperplates, testing of compasses and construction and repair of nautical and geodetic instruments were commenced.

In the meantime the Hydrographic Commission was dissolved in 1876 and the steamer *Washington* was fitted out as a floating school for surveyors. She was succeeded by the *Eridano* and *Scilla*.

Principally under the command of A. IMBERT et C. ROSSI, these ships in a little over 10 years surveyed the Italian Coast of the ADRIATIC and the IONIAN SEA and the coasts of the lower TYRRHENIAN SEA, SICILY and the EOLIAN ISLANDS. These areas were resurveyed and completed in the following years by Commanders MAGNAGHI, MIRABELLO, BIANCHERI CASSANELLO, BERTOLINI and CATTOLICA and the hydrographic survey of the Italian coast was definitely completed in 1903.

In that year the *Staffetta*, which had been adapted for the purpose, took the place of the *Scilla* as a surveying vessel. She continued to keep the home surveys up to date and began those of the Coasts of the RED SEA and the INDIAN OCEAN (Commanders PATRIS BOET, GIAVOTTO, TIGNANI and MARCHINI 1903-1914). The *Elba*, *Volturmo*, *Governolo* and *Volta* of the R. I. N. collaborated to some extent in this work.

The *Staffetta* was replaced in 1918 by the *Magnaghi* which vessel continued the surveys in the RED SEA (Commanders MARCHINI and NOVARA 1918-1924). In recent years the surveying vessels *Scilla*, *Cariddi* and *Dante di Lutti* began the hydrographic surveys of the coast of TRIPOLITANIA, CYRENAICA and the DODECANESE.

Having assumed the post of Director of the Hydrographic Office in 1898, Commander PASQUALE LEONARDO CATTOLICA extended its sphere of action considerably and established a close collaboration with the scientific work of the ISTITUTO GEOGRAFICO MILITARE at FLORENCE. The name of the Hydrographic Office was changed to ISTITUTO IDROGRAFICO DELLA R. MARINA which has been the title ever since.

Besides the work which specially falls to the share of a Hydrographic Office, and which is fairly considerable on account of new coasts having been added to the Italian Kingdom in recent years, the Hydrographic Institute has taken an active part in the preparation and fitting out of the various oceanographic expeditions, which, together with those of the



COMANDANTE ANTONIO IMBERT



AMMIRAGLIO G. B. MAGNAGHI



COMANDANTE PASQUALE LEONARDI CATTOLICA

surveying vessels, have been undertaken by the ships of the Royal Italian Navy.

A special *COMMISSIONE IDROGRAFICA* is called to study and solve hydrographic problems, to organise the hydrographic expeditions and the work of the surveying vessels and to meet the wants of shipping in the branches of Hydrography and Navigation. The head of the Hydrographic Institute is President of this Commission.

The Institute, which is now under the direction of Captain *LUIGI TONTA*, has branch offices at *SPEZIA*, *TARANTO* and *VENICE* and is divided into the following sections which undertake the work specified :

(a) Charts.

This Section carries out the compilation, drawing, reproduction and publication of *Charts* of the coasts of Italy and its Colonies, the keeping up to date of the charts of every description in the Office and the issue of *Notices to Mariners*, *List of Lights* and a *Catalogue* of all publications : Charts are engraved on copper, stone and zinc ; only small corrections are made on the copper plates, large corrections and new charts are transferred on stone or zinc, by photography. The printing is done from stone or zinc on dry paper by the usual printing machines.

Notices to Mariners are issued weekly and monthly. The *List of Lights* is issued in two parts : the first annually, the second biannually.

(b) Publications and Investigations.

This Section controls the Astronomical Observatory, which is in charge of the compilation of the *Effemeridi-Astronomiche* and of the *Annali Idrografici*, and also the Meteorological, Tidal and Time Signal Offices, which elaborate the observations made in these special subjects. It supplies the results to the ships of the Royal Italian Navy and of the Mercantile Marine and superintends the Coastal Semaphore Service.

All *geophysical* and *geodetic problems* are studied by this section.

The observatory of *POLA* is also under its direction. Astronomical, seismological and tidal observations are no longer made there, *meteorological* and *magnetic observations* only are still made at this Observatory, which is now less important than the branch Offices at *SPEZIA*, *TARANTO* and *VENICE*.

Three selfregistering *Tidegauges* in Italy and those in the Colonies are under the care of this Section, the others being controlled by the "COM-

MISSIONE MAREOGRAFICA ” which is a branch office of the “ COMMITATO TALASSOGRAFICO ”. A technical Sub-Committee of this “ Comitato ” is established under the presidency of the Director of the Hydrographic Institute.

(c) Sailing Directions and Nautical Publications.

This Section compiles the *Sailing Directions* for Italian waters and those of its Colonies and is in charge of all nautical subjects.

The views, formerly inserted in the *Sailing Directions*, have not been published in the new edition because they were no longer up to date ; they will be published in future in special Albums.

(d) Compasses and allied subjects.

This Section studies *Terrestrial Magnetism* and subjects connected with magnetism on board ship. It superintends the installation and compensation of *compasses* in ships.

(e) Verification and repair of instruments.

This Section is in charge of *Chronometers* and *Deck Watches* of the Royal Italian Navy and of the construction, testing and repair of *nautical, hydrographic* and *meteorological instruments* for all ships and for the Semaphore Stations.

The UFFICIO NAUTICO D'INFORMAZIONI, which was established many years ago at Genoa, is now located in the palace of S. Giorgio and collaborates with the Hydrographic Institute to give any information required by the Italian Merchant Marine.

The General Agent for the sale of the publications of the Hydrographic Institute is the UFFICIO NAUTICO MARCONI which is established at GENOA, TRIESTE and NAPLES and has branch Offices at the principal ports of Italy.

The Staff and Personnel of the Hydrographic Institute consists of :

a. — Military staff and personnel.

1 Captain, 3 Commanders, 7 Lieutenants, 1 Senior Paymaster (of the Royal Italian Navy, R. I. N.).

1 Lieutenant, 1 Sub-lieutenant (of the C. R. E., Warrant Officers promoted to Officers)
 30 Warrant Officers, 1 Superintendent of Stores, 5 officials of the Dockyard at SPEZIA
 and the necessary number of military Clerks for the administrative service and Signalmen
 for the Semaphores.

b. — Civil staff and personnel.

2 Specialists with diplomas, 5 Principal Technicians, 25 Technicians and Assistant Technicians.

A. — Direction.

Captain R. I. N., Director.

Commander R. I. N., Assistant Director.

Lieutenant of the C. R. E., A. D. C.

Senior Paymaster of the R. I. N., Head of the Administrative Service.

Lieutenant C. R. E., Paymaster.

Technician, Secretary.

B. — Charts Section

Commander R. I. N., Head of Section.

1. Hydrographic Subsection.

Lieutenant R. I. N., Head of Subsection.

Principal Hydrographic Technician.

4 Technicians for correction of Charts and Sailing Directions, Notices to Mariners, Lightlist, Distribution and Despatch and Sale of publications.

2. Cartographic Subsection.

Lieutenant R. I. N., Head of Subsection.

a) *Draughtsmen's Room* :

Principal Technician, Cartographer and Draughtsman.

4 Technicians, Topographical Draughtmen

2 Technicians, Controller and Keeper of Archives.

b) *Calculations Office* :

Principal Technician, Cartographer and Calculator.

Technician, Calculator.

3. Reproduction of Charts.

Lieutenant R. I. N., Head of Subsection.

a) *Engraving-room and Zincos* :

Principal Technician, Engraver and Draughtsman.
5 Technicians, Engraver and Draughtsman.
2 Apprentices, Engraver and Draughtsman.

b) *Photography* :

Technician, Photographer.
Assistant, Photographer.

c) *Calcography, Litho and Zincography and Topography* :

Technician, Lithographer and Printer.

C. — Section of Publications and Library.

Lieutenant R. I. N., Head of Section.
Technician.

D. — Instruments Section.

Lieutenant R. I. N., Head of Section.
Principal Technicians Mechanic.
2 Technicians Mechanics.
2 Technicians in charge of chronometers.

E. — Section of Compasses and Terrestrial Magnetism.

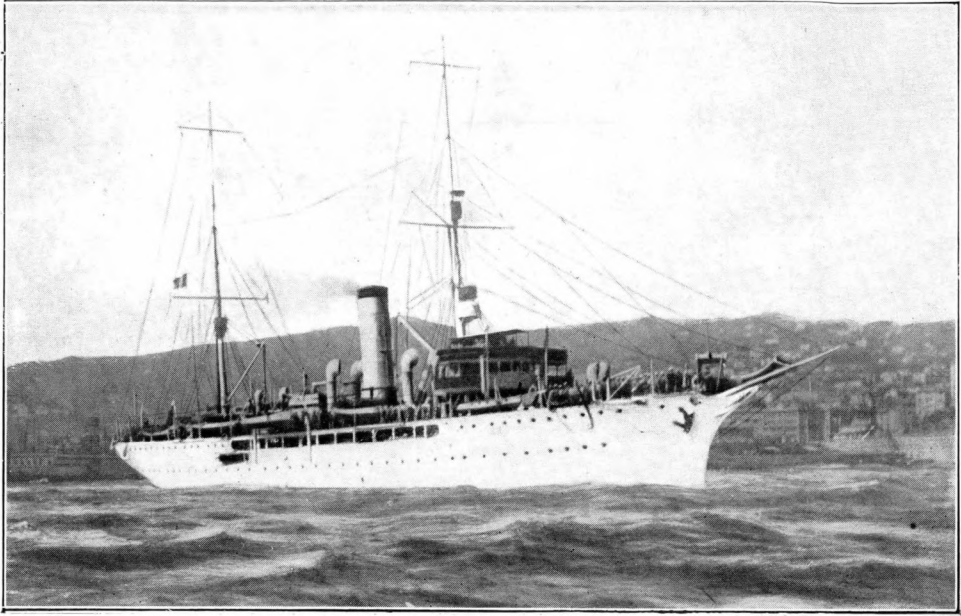
Lieutenant R. I. N., Head of Section.

F. — Geodetic and Astronomical Section.

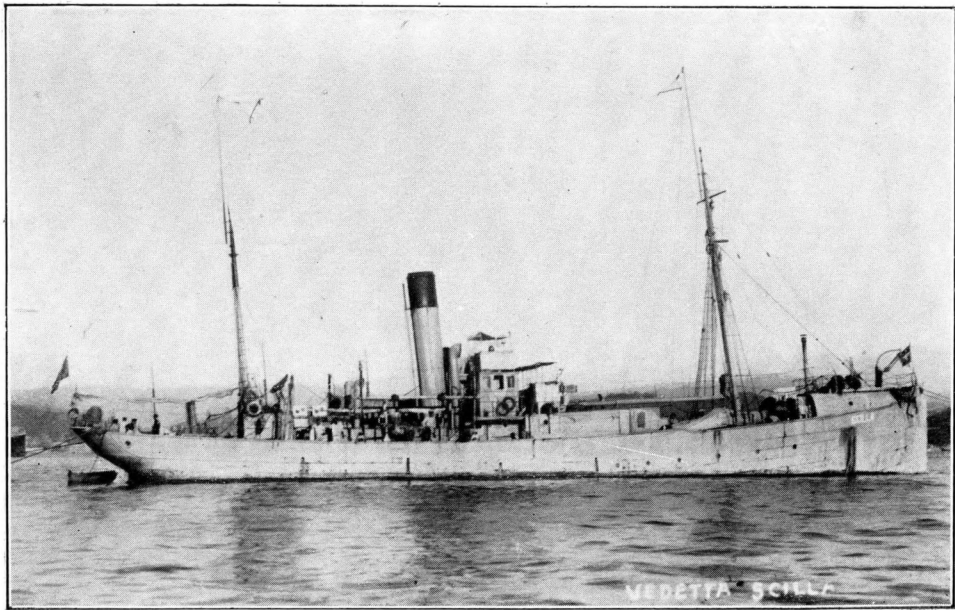
Commander R. I. N., Head of Section.
Specialist with a diploma, Astronomer and Geodesist.
Technician, Astronomer and Geodesist.

G. — Geophysical Section.

Lieutenant R. I. N., Head of Section.
Specialist with a diploma, Geophysician.



R. NAVE AMMIRAGLIO MAGNAGHI



R. VEGETTA IDROGRAFICA

The 30 Warrant Officers are attached to the various sections according to the requirements of the work. There are also 14 employees (amongst them 1 engraver, 3 draughtsmen and 1 corrector of charts) and the necessary number of odd men.

The Surveying vessels of the Royal Italian Navy are :

The *Ammiraglio Magnaghi* of 2,050 tons displacement and 2,000 HP., length 89 m. (292 1/2 ft.), draft 3.80 m. (12 1/2 ft.), bunker capacity 500 tons, 4 steam launches and 1 motor launch. Complement 174, including :

10 Officers (including the Captain) for hydrographic work. This number is liable to change in accordance with the requirements of the survey.

If required : 1 Professor of Biology and Assistant, 1 Professor of Geophysics and 1 Professor of Chemistry, 2 Draughtsmen Cartographers, embark temporarily

She has recently been fitted with an " Ultra-sonic " sounding apparatus on the Langevin-Florisson System.

The *Mario Bianco*, *Scilla*, *Cariddi* and *Dante de Lutti*, all of one type, ex British and Japanese drifters of 330 tons displacement and 380 HP. Length 38 m. (124 3/4 ft.) draft 3.30 m. (11 ft.), bunker capacity 110 tons, 1 motor launch.

Complement 54, including :

1 Lieutenant, 1 Sub-lieutenant, 2 Warrant Officers (for hydrographic work).

The Officers are trained at the Hydrographic Institute and on board of the Surveying vessels.

The first notions of Hydrography are communicated to Cadets at the Naval Academy. Before their promotion to Lieutenant they have to go through a supplementary course of lectures, in which is included a complete program of Hydrography and in order to obtain a special diploma as Hydrographic Surveyor they have to complete another theoretical and practical course lasting 18 months (6 months on board surveying vessels preceded and followed by six months at the Hydrographic Office).

The Officers who have successfully gone through this course and obtained a diploma as specialists in advanced Hydrography (I. S.) continue their normal naval service and must satisfy the regulations for service as sea and command ships of war, but they are periodically attached to the Hydrographic Office as Heads of Sections and as Commanders of Surveying vessels. The Head of the Hydrographic Office is chosen from amongst them.

The Navigating Officers of squadrons, and the Instructors of Navigations, Nautical Astronomy and Ships Magnetism at the Naval Academy are I. S. Officers for preference.

The thanks of the Bureau are due to Captain TONTA R. I. N. and to his Staff for their very cordial reception of its representative and for their highly appreciated assistance in procuring the elements and photographs for this article.

