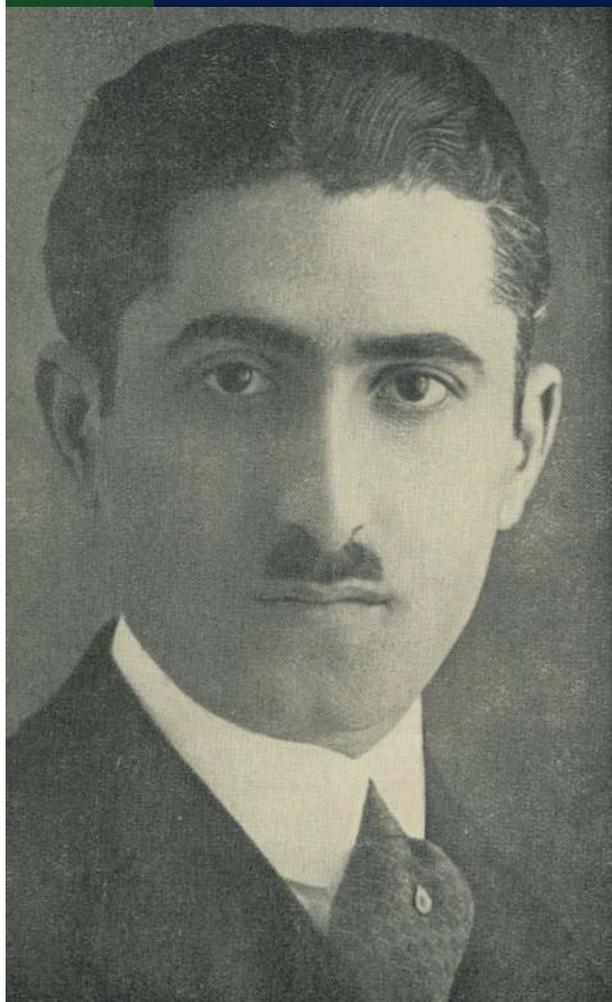




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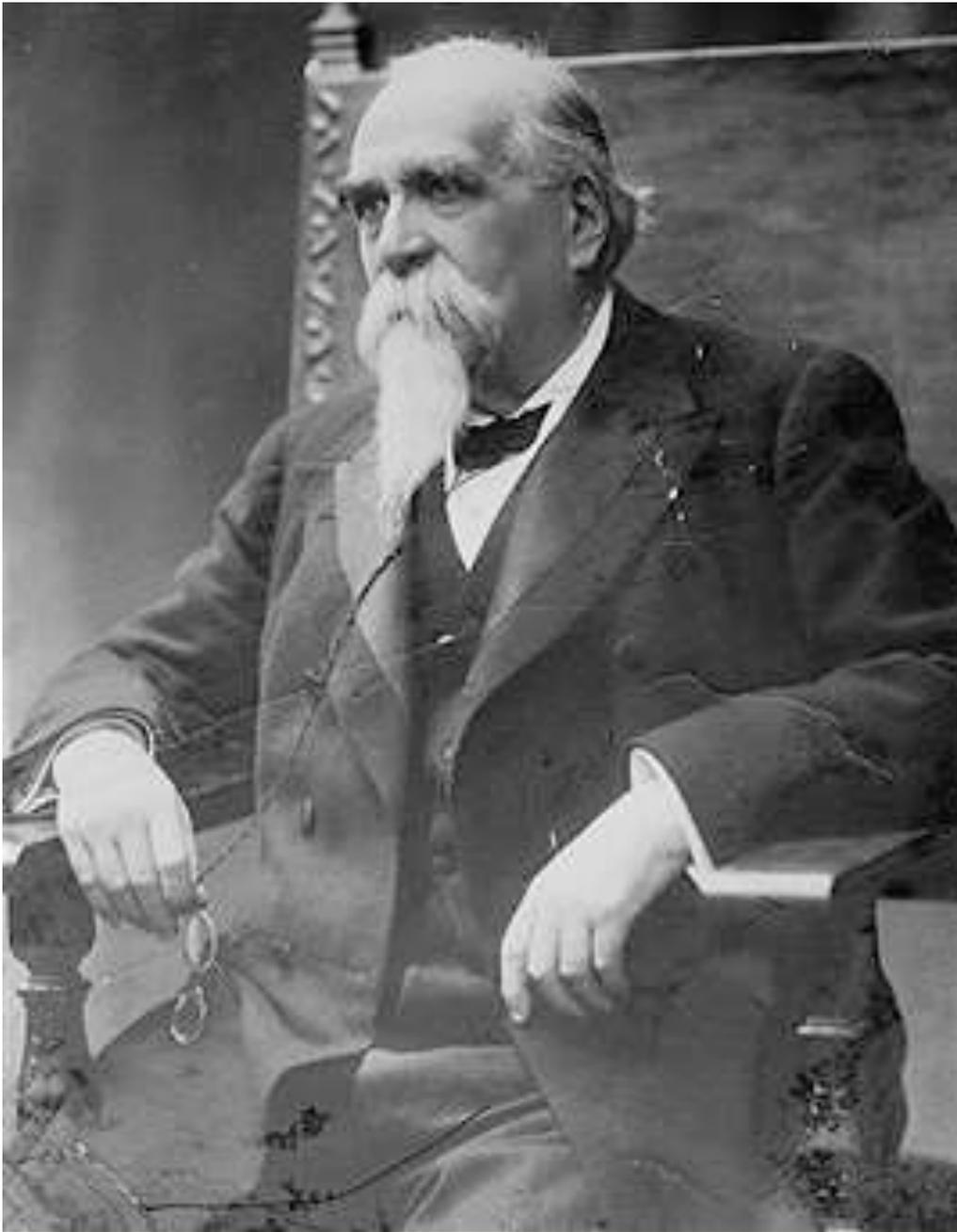


Aldo Pontremoli

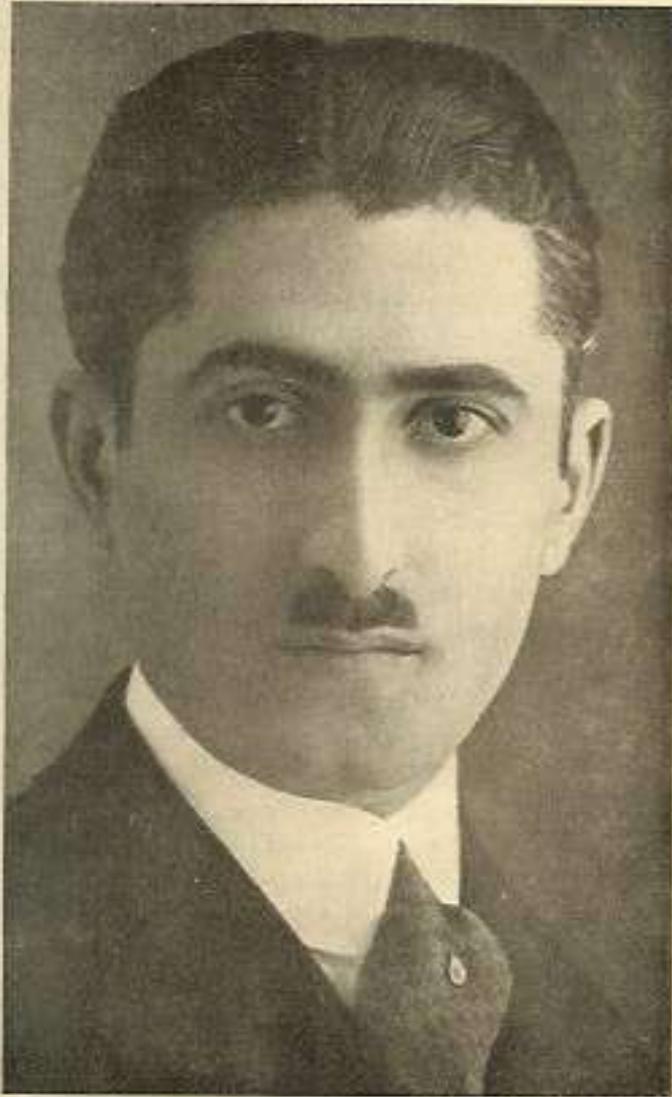
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ALDO PONTREMOLI

1920 Graduation in Physics

1920 Assistant in Rome

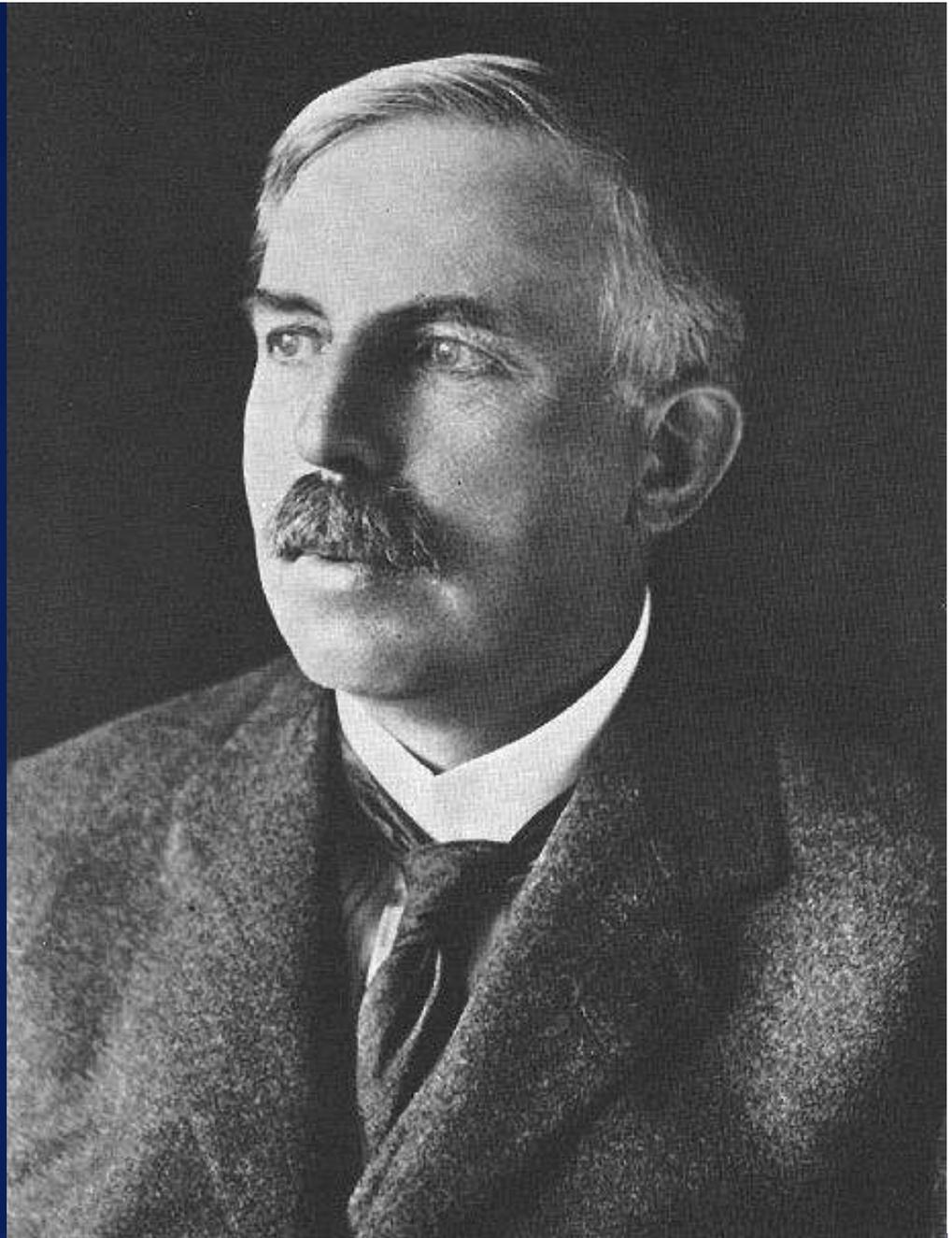
1924 Lecturer in Superior Physics

1924 Milan Institute of Physics

1926 Prof. Theoretical Physics

1928 Polar expedition





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Rutherford: “Bakerian Lecture: Nuclear Constitution of Atoms”
Proceedings of the Royal Society 1920, 97, 686: 374-400.

“We [...] have strong reason for believing that **the nuclei of atoms contain electrons** as well as positively charged bodies [...]. It is of interest to note the very different *rôle* played by the electrons in the outer and inner atom. In the former case, the electrons arrange themselves at a distance from the nucleus, controlled no doubt mainly by the charge on the nucleus and the interaction of their own fields. In the case of the nucleus, **the electron forms a very close and powerful combination with the positively charged units** and, as far as we know, there is a region just outside the nucleus where no electron is in stable equilibrium.”

“On present views, the neutral hydrogen atom is regarded as a nucleus of unit charge with an electron attached at a distance, and the spectrum of hydrogen is ascribed to the movements of this distant electron.”



“Under some conditions, however, it may be possible for an electron to combine much more closely with the H nucleus, forming a kind of neutral doublet. Such an atom would have very novel properties.

Its external field would be practically zero, except very close to the nucleus, and in consequence it should be able to move freely through matter.

Its presence would probably be difficult to detect by the spectroscope, and it may be impossible to contain it in a sealed vessel.

[...] it should enter readily the structure of atoms, and may either unite with the nucleus or be disintegrated by its intense field, resulting possibly in the escape of a charged H atom or an electron or both.

If the existence of such atoms be possible, it is to be expected that they may be produced [...] in the electric discharge through hydrogen [...].”



“The existence of such nuclei may not be confined to mass 1 but may be possible for masses 2, 3, or 4, or more, depending on the possibility of combination between the doublets.

The existence of such atoms seems almost necessary to explain the building up of the nuclei of heavy elements; for unless we suppose the production of charged particles of very high velocities it is difficult to see how any positively charged particle can reach the nucleus of a heavy atom against its intense repulsive field.”



Institute of Complementary Physics (1924)

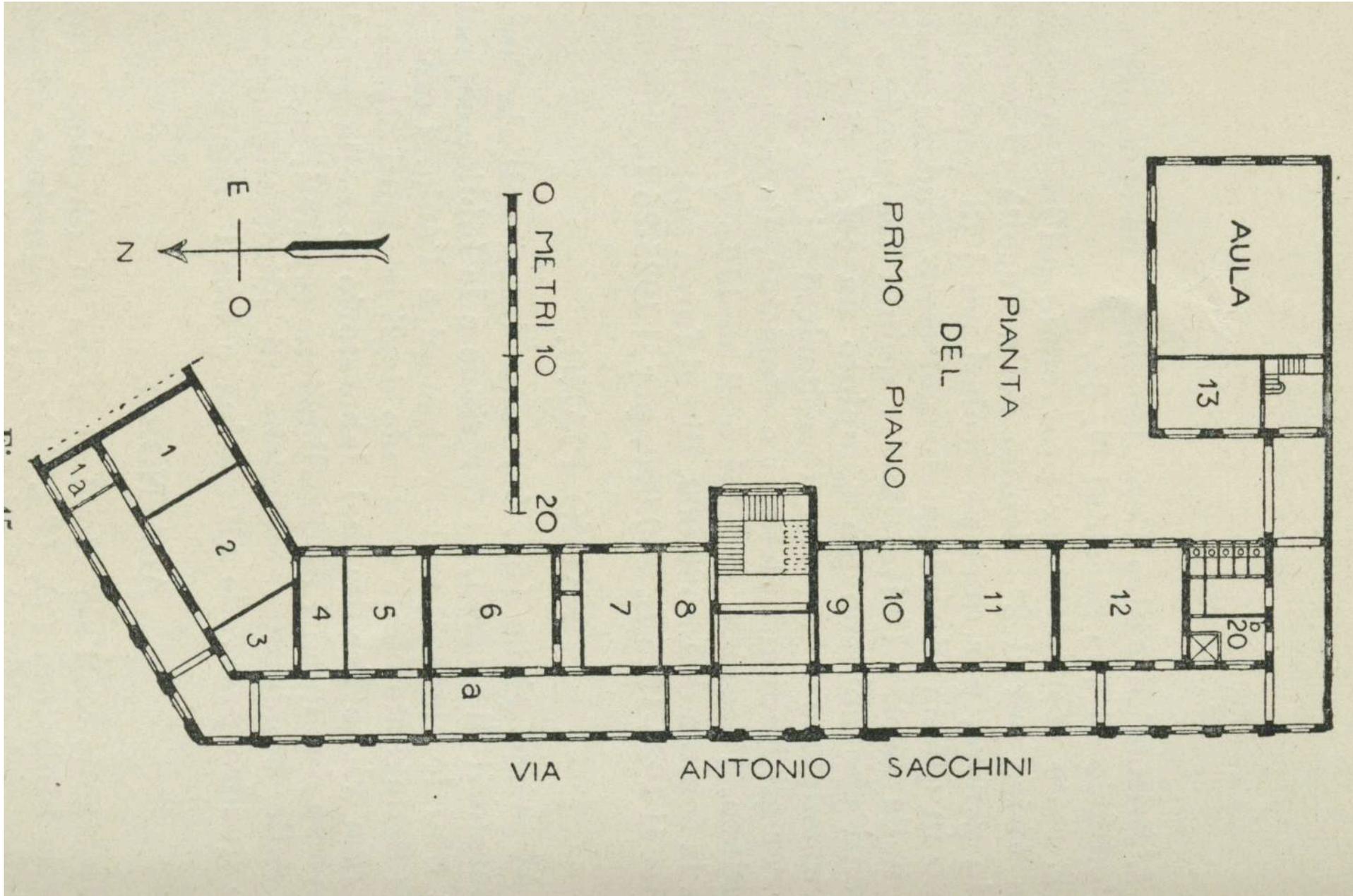
Radiology Laboratory

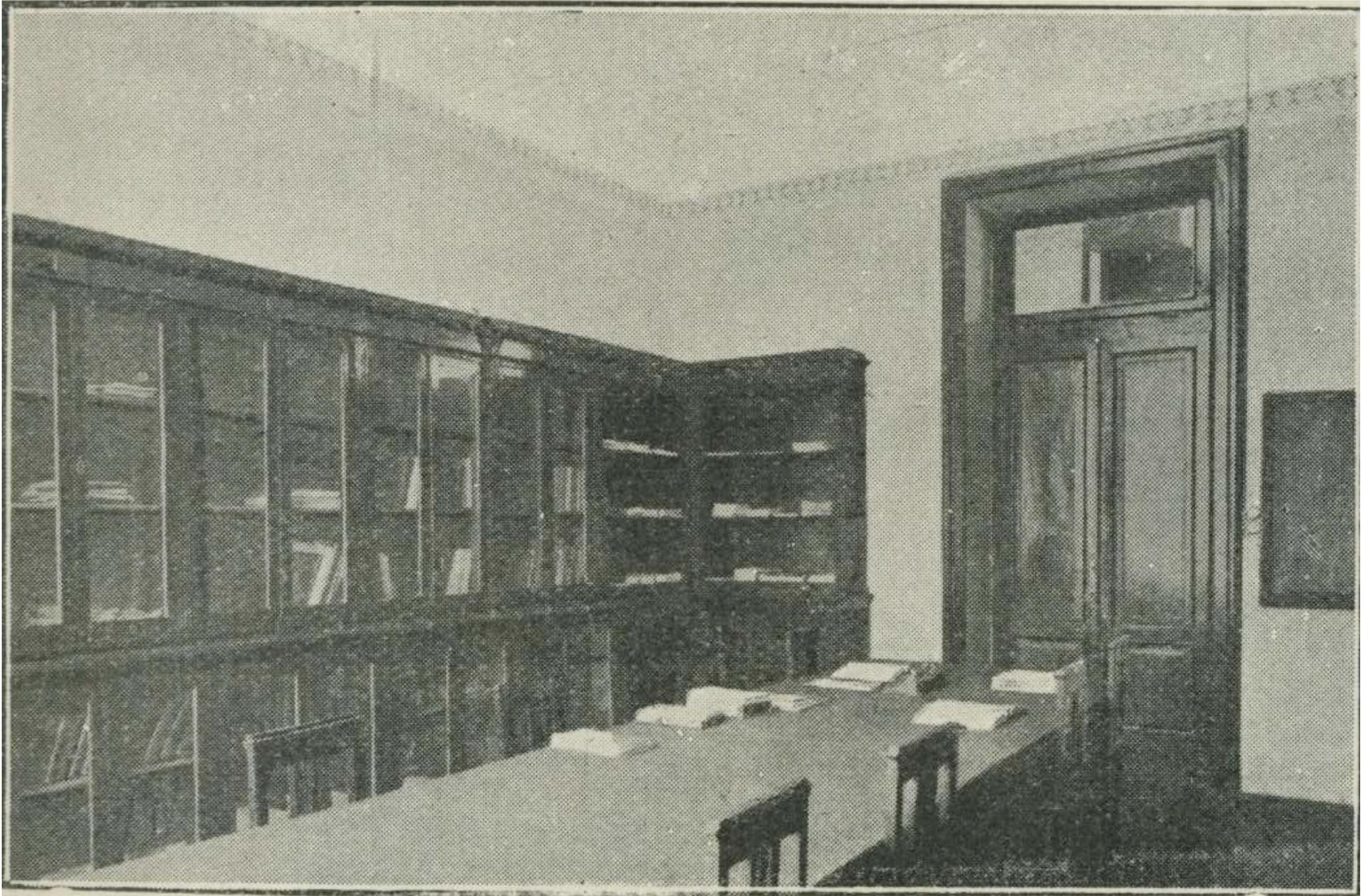
Physics courses for the Faculty of Sciences

- Complementary Physics (sciences);
 - Electrotechnics and Radiation Physics (medicine);
 - Physiological Optics (ophthalmology).
-
- Theoretical Physics

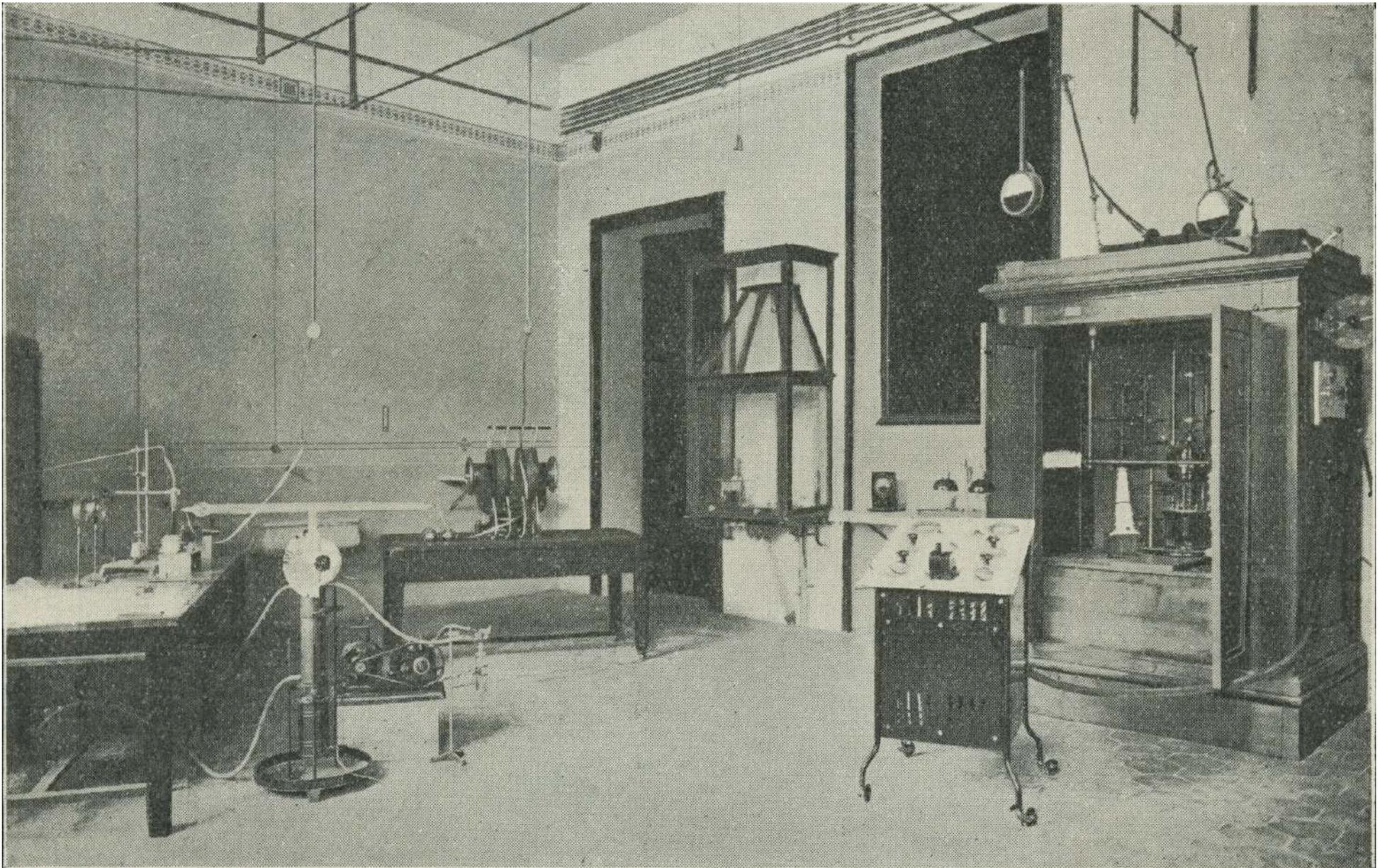
First financial support: L 500.000



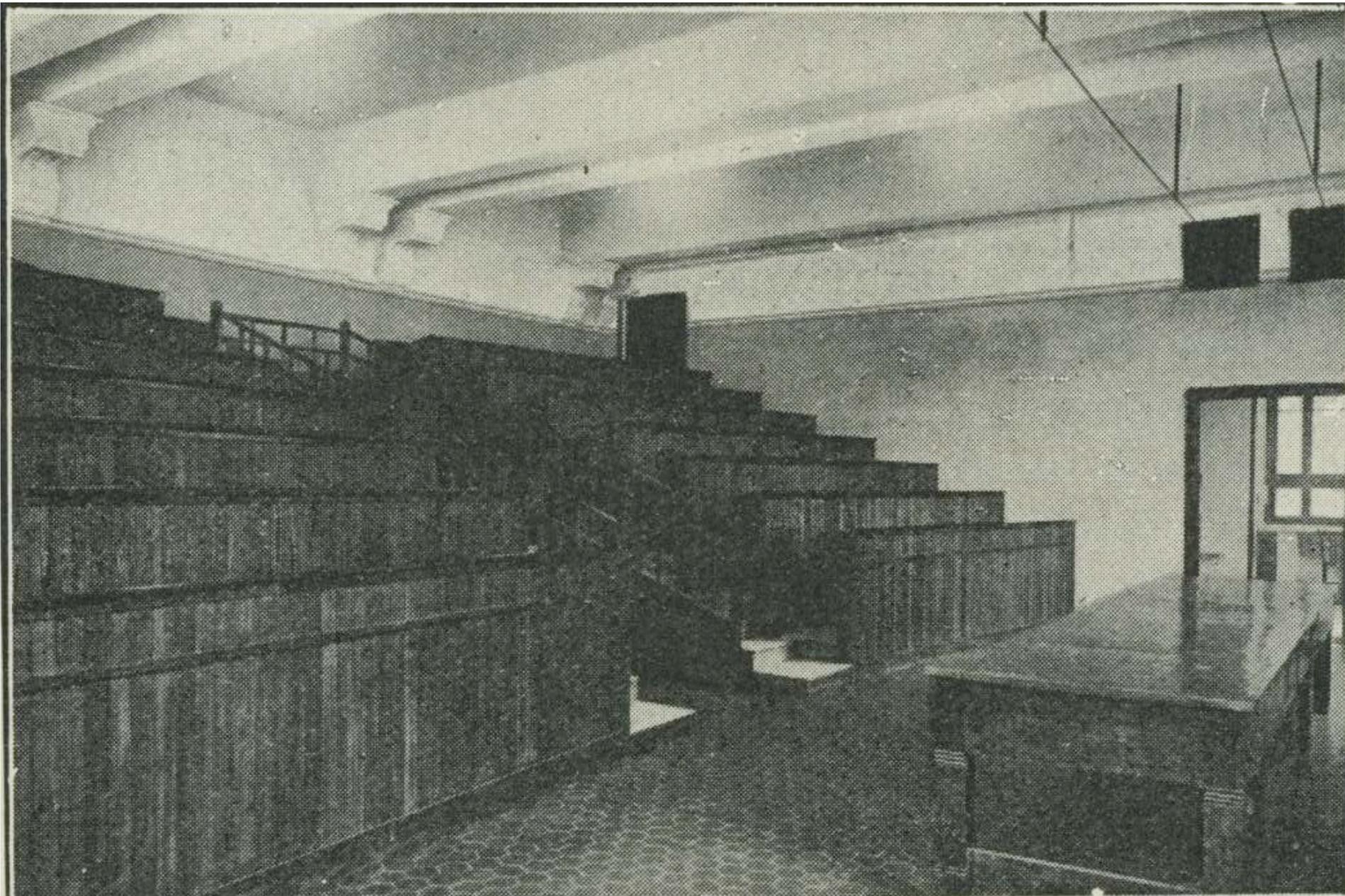




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Public competition for Theoretical Physics (Nov 1926)

Commission: Orso Mario Corbino (president), Antonio Garbasso, Gian Antonio Maggi, Michele Cantone, Quirino Majorana.

Winners: 1° Enrico Fermi (unanimously)
 2° Enrico Persico (by majority)
 3° Aldo Pontremoli (unanimously)

“The Commission, after an extensive examination of the candidate’s work, expresses the following opinion in a unanimous manner: Prof. Pontremoli shows with his studies a broad and diverse culture, even **in the fields of modern theoretical physics**; an excellent mathematical preparation, lively wit, fervid fantasy and a great passion for scientific research. It is also well-established that he is well-versed in teaching and above all the benevolences he has acquired, **creating in a short time in Milan a Physics Institute which is among the best equipped in Italy for certain modern paths of physics research.**”



Fermi is superior over all other candidates

"From our discussion, we agreed that his ability and efficiency degree in his scientific investigations, his profound culture in higher mathematics and higher mechanics, his pertinent and inert mindsets prevail in Persico;

His glittering liveliness of commitment, his spirit of initiative, **his adherence to the broad and sometimes turbulent movement of modern physics** dominate instead in Pontremoli. "



Italian polar expeditions:

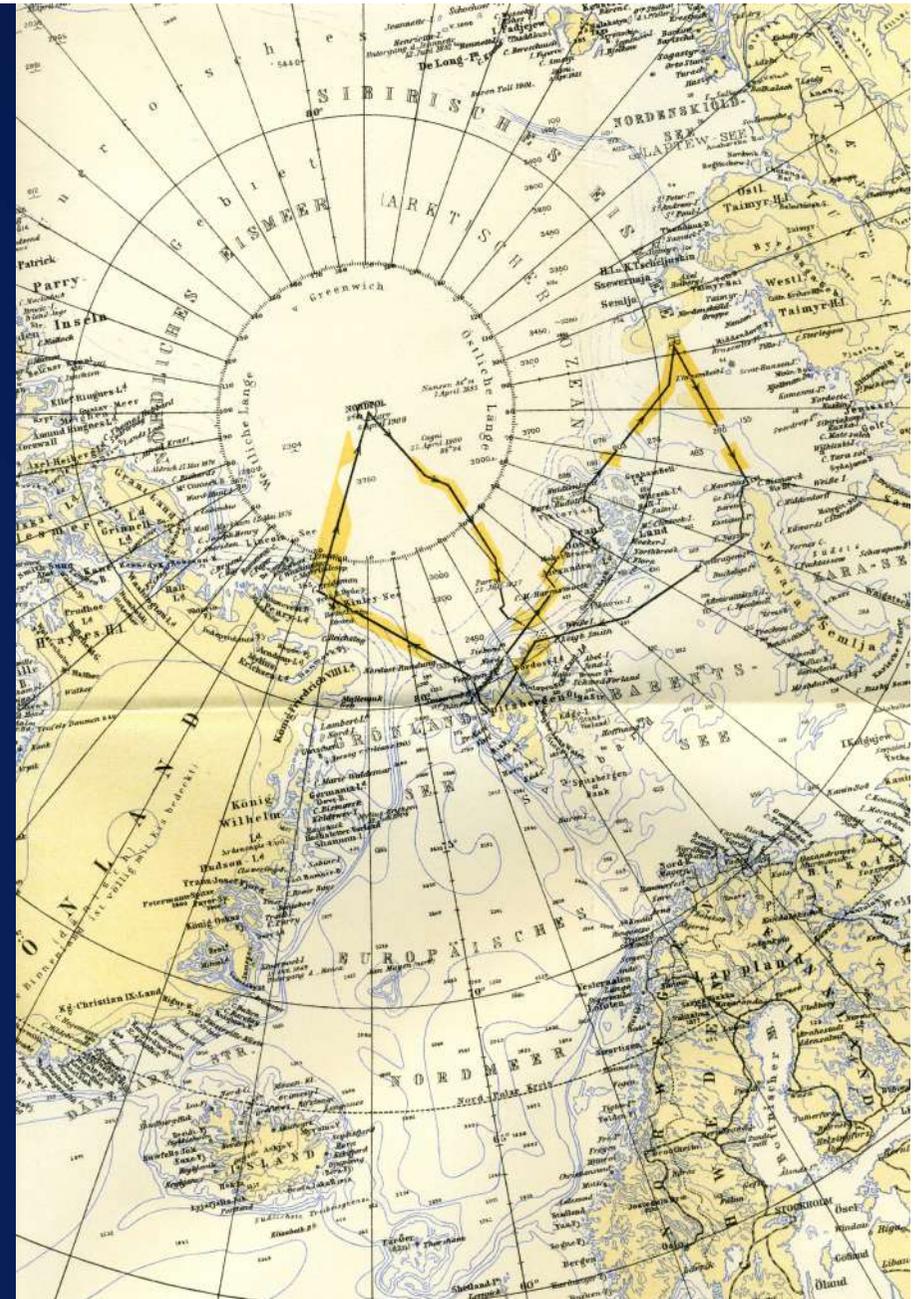
- Political prestige
- Aircraft technology
- Scientific research

Nobile's polar expeditions

Norge (1926)

Italia (1927 and 1928)

Amundsen (Maud, 1918-1925)



Scientific expedition:

František Běhounek (Radiological
Institute, Prague)

Finn Malmgren (Uppsala Univ.)

Luigi Palazzo (Central Institute of
Meteorology and Geodynamics,
Rome)

Aldo Pontremoli (Physics Institute,
Milan Univ.)



Scientific interest in polar research:

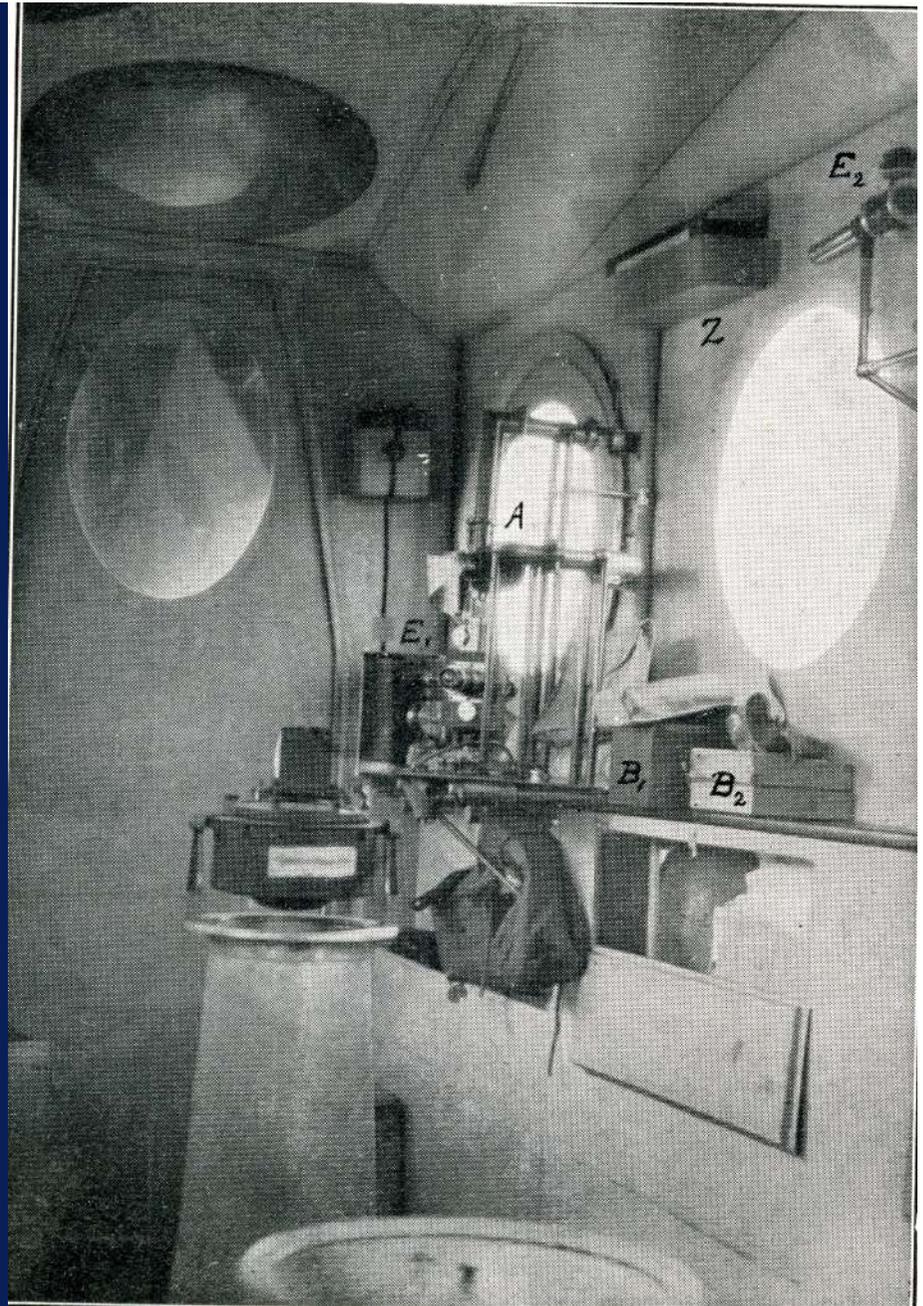
- Traditional research (geomagnetis, gravity, oceanography) in an unexplored environment
- New research (penetrating radiation, atmospheric radioactivity, radio transmissions)

International enterpise in the post-war time

New devices designed and built for research in polar climatic conditions (tests in cold storages, etc.)

Limits due to the devices' weight and dimensions





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Misure di intensità delle
componenti orizzontali del campo magnetico
effettive durante il viaggio 15-18 maggio

Porto = 1 milia (6.5) il valore di detta componente alla
Kingstony il 15 maggio alle P 30 a. - a la

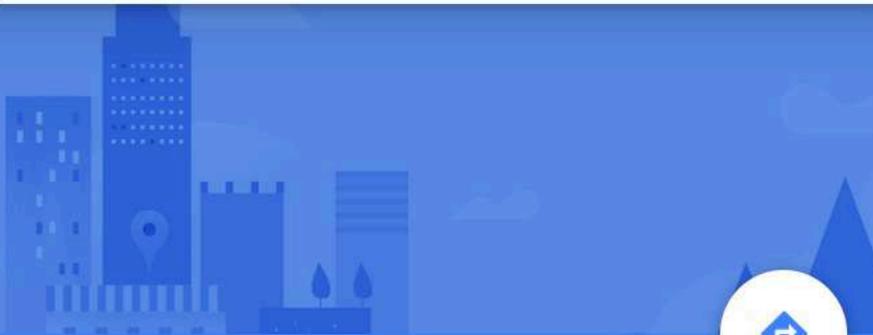
giorno	ora	posizione	valore	
	14.03	73° 20' N, 10° 50' E	1.020	
	52	73° 53' 12"	1.110	detto
	15.14	73° 56' 18"	0.996	
	22	73° 58' 15" 31	1.046	
	42	80° 05' 15" 10	0.915	detto
15	16.29	80° 16' 17" 40	1.101	
	17.56	80° 40' 21" 42	1.078	
	18.21	80° 56' 23"	0.996	
	20.55	81° 15' 20" 68	0.968	
	21.14	81° 15' 23"	0.839	
	21.23		0.885	
16	23	73° 18' 31"	0.651	
	1.47	78° 20' 83" 25	0.907	
	8 -	74° 18' 64" 20	0.960	
	14.05	77° 45' 53" 25	1.024	
	16.14		0.988	
17	23.23	77° 20' 25" 15	0.927	
	25		0.962	
	28	77° 24' 25" 20	0.907	
	55		0.996	

La posizione cui sono state fissate del
magnetometro zeffi in base alle osservazioni.

L.



☰ **Острова Понтремоли** 🔍 ✕



Ostrova Pontremoli
Russia

 **Indicazioni stradali**

 **SALVA**  **NELLE VICINANZE**  **INVIA AL TELEFONO**  **CONDIVIDI**

