

[Click here to view linked References](#)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

Giovanni Mingazzini (1859–1929)

Lazaros C. Triarhou

Prof. L.C. Triarhou, MD, PhD

University of Macedonia

Thessaloniki, Greece

E-Mail: triarhou@uom.edu.gr

1 Professor Giovanni Mingazzini (Fig. 1) is considered to be one of the founders of Italian
2 neurology [4].
3

4 Born in Ancona on 15 February 1859 to Ferdinando Mingazzini, an engineer, and
5 Cesarina Franceschelli, he studied medicine at the University of Rome ‘La Sapienza’ from
6 1877 to 1883 [2]. His teachers included physiologist Jacob Moleschott (1822–1893) and
7 anatomist Francesco Todaro (1839–1918). In 1884 he went to Munich to study neuroanatomy
8 under Bernhard von Gudden (1824–1886).
9

10 In 1891 Mingazzini founded and directed the Laboratory of Anatomic Pathology at the
11 psychiatric hospital of Santa Maria della Pietà in Rome. In 1907 he left the direction of the
12 Laboratory to Ugo Cerletti (1877–1963), and succeeded Clodomiro Bonfigli (1838–1909) as
13 director of the hospital, a post he kept through 1921.
14

15 In 1895 he was appointed professor of neurology and psychiatry at the University of
16 Rome, succeeding Ezio Sciamanna (1850–1905) [1]. In 1921, after the death of Augusto
17 Tamburini (1848–1919), Mingazzini assumed the directorship of the Clinic of Nervous and
18 Mental Diseases, which he headed until his death [4].
19

20 Mingazzini served as first vice-president of the Italian Society of Neurology, established
21 in April 1907. The first meeting of the Society took place the following year, with Mingazzini
22 giving a keynote lecture on the aphasias.
23

24 Mingazzini’s ‘Note on three brains of human triplet fetuses’ caught the attention of the
25 young neurologist Sigmund Freud [3]. Early on, Mingazzini occupied himself with
26 craniology, indirectly influenced by Cesare Lombroso (1835–1909); actually, it was the
27 association with Lombroso’s student, anthropologist Giuseppe Sergi (1841–1936), in whose
28 Laboratory of Experimental Psychology Mingazzini had conducted neuroanatomical research
29 as a medical graduate, that kindled such an interest. He published ‘Thirty skulls and brains of
30 Italian delinquents’ (Reggio-Emilia, 1888); ‘Cranial varieties, sub-varieties and deformities in
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65

mental patients' [8]; and 'Brain abnormalities in criminals' [9].

An ardent follower of the clinicopathologic approach in neuropsychiatry, Mingazzini published 200 papers [6] on topics including the components of the cerebellar peduncles and restiform body (1890, 1928), brain tumors and abscesses (1900, 1910, 1927), aphasia (1902, 1912, 1922, 1925), progressive vertebral ankylosis (1905), hemiatrophy of the tongue of supranuclear origin (1906), lenticular hemiparesis or acute syndrome of the putamen, today known as striatal hemiplegia (1912), motor speech pathways (1913, 1914), Parkinsonian symptom complex (1915), apraxia (1920), hypophyseal tumors (1920), encephalitis lethargica (1921), origin and course of the hypoglossal nerve (1923), cerebellar pathology (1924), cerebrocerebellospinal aplasia (1924), spinal tumor diagnosis (1925), cephalalgia and migraine in psychoses (1926), malariotherapy of dementia paralytica (1927), haemorrhagic myelitis (1928), and the anatomy of the chimpanzee and orang-utan cerebrum (1928).

Moreover, Mingazzini authored 30 books [2], including 'Manual of anatomy of the human central nervous organs' (Rome, 1889), 'The brain in relation to mental phenomena' (Torino, 1895), 'Essays in psychiatry for use by physicians and jurists' (Torino, 1908), 'Clinical anatomy of nervous centers' (Torino, 1908, 1913), 'The aphasias' (1923), and oversaw the Italian editions of Lewandowsky's 'Practical neurology' (Milano, 1914) and Economo's 'Cytoarchitectonics of the human cerebral cortex' (Bologna, 1928). His 'Anatomical, physiopathological and clinical study of the corpus callosum' (Berlin, 1922), dedicated to Gudden, was considered by many neurologists to be the standard work on the subject [1].

With his wife Helene Bobrik (1870–1942) Mingazzini had two sons, physician Ermanno Mingazzini (1893–1965) and classical archaeologist Paolino Mingazzini (1895–1977).

Being a liberal, Giovanni Mingazzini refused to sign the oath of allegiance to the Fascist regime [1]. He died on 3 December 1929 in Rome of a heart attack. Some of his noted alumni

1
2 were Gioacchino Fumarola (1877–1962), Gaetano Perusini (1879–1915), Giuseppe Amantea
3 (1885–1966), and Antonino Clementi (1888–1968).

4 The ‘Mingazzini field,’ so named by the Swedish neurologist Salomon Eberhard
5 Henschen (1847–1930), corresponds to the anatomical region anterior to the left lenticular
6
7 nucleus, where fibers from Broca’s area of both hemispheres converge [1].
8
9

10
11 The ‘Mingazzini test,’ described in 1913 [10], is the eponym for a procedure to detect
12 latent pyramidal paralysis [5]. The patient is placed in supine position and asked to bend the
13
14 legs at the hips and knees with the eyes closed; the neurologist then observes whether either
15
16 or both legs extend [7]. The eponym ‘Barré arm test,’ commonly used for that manoeuvre, is
17
18 based on a description by Jean-Alexandre Barré (1880–1967) seven years after Mingazzini.
19
20
21 Currently, the term ‘Barré test’ is confined to the finger-spread arm test, and the term
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
‘Mingazzini test’ to the leg test with the patient lying on the back [7].

66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
Conflicts of interest None.

References

1. Ferraro A (1953) Giovanni Mingazzini (1859–1929). In: Haymaker W (ed) *The founders of neurology*. Charles C Thomas, Springfield, pp 192–195
2. Frank C (1930) Giovanni Mingazzini und seine Schule. *Arch Psychiatr Nervenkrankh* 92:1–7
3. Freud S (1888) Rezension von Mingazzini, Nota sopra tre cervelli di feti trigemini umani. *Zbl Physiol* 1:596
4. Fumarola G (1929) Giovanni Mingazzini. *Policlinico Sez Prat* 36:1900–1902
5. Gomes MM (2019) Jean-Alexandre Barré (1880–1967): his detection sign of subtle paresis due to pyramidal deficit (1919) and his work in line with that of Giovanni Mingazzini (1859–1929). *Neurol Sci* 40:2665–2669
6. Imber I (1930) Zum Tode Giovanni Mingazzini's. *Med Welt Ärztl Wschr* 2:1–3
7. Koehler PJ (2000) The Barré and Mingazzini tests. In: Koehler PJ, Bruyn GW, Pearce JMS (eds) *Neurological eponyms*. Oxford University Press, New York, pp 119–126
8. Mingazzini G (1893) Contributo alla craniologia degli alienati. *Atti Soc Rom Antropol* 1:87–145
9. Mingazzini G (1894) Sur la signification des anomalies de l'encéphale chez les criminels. *Rev Neurol* 2:339
10. Mingazzini G (1913) Sur quelques "petits signes" des parésies organiques. *Rev Neurol* 20:469–473

Caption

Fig. 1 Giovanni Mingazzini, circa 1900 (Studio of Francesco Felicetti, Rome). Unpublished photograph, private archive. Copying, redistribution or retransmission without the author's express written permission is prohibited. Signature from Archivio Storico della Psicologia Italiana dell'Università degli Studi di Milano-Bicocca (www.aspi.unimib.it/collections/object/detail/10689).



Signor. Mingazzini