

IOAN BORCEA AND THE FIRST ROMANIAN MARINE ZOOLOGICAL STATION AT AGIGEA (1926)

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I. Borcea belongs to the outstanding Romanian pioneers of marine biology. His most remarkable achievement is certainly the creation of the first Romanian marine biological research organization, the Marine Zoological Station, at Agigea, in 1926; it became a major component of the Romanian Marine Research Institute (1970–1999), today the “Grigore Antipa” National Institute for Marine Research and Development (NIMRD) located in Constantza. Various major scientific, didactic and public performances round off Borcea’s prolific career: a lively personality, he contributed to zoology, marine hydrobiology, ecology, and general biology. Besides organizing scientific research, he introduced general biology into university curricula and is founder, member, honorary member and president of different national and foreign professional organizations and editor of learned journals. This paper is dedicated to Borcea; it is intended as homage to him on the occasion of the 125th anniversary of his birth.

BIOGRAPHICAL DATA

Ioan Borcea (Fig. 1) was born in Buhoci, a village in the Bacău county (in the historical province of Moldavia), Romania, on January 13, 1879. After spending his childhood in the villages of Letea Veche and Racova (near Buhuși), he graduated from the “Costache Negruzzi” national high school in Iași and studied at the University of Iași, or the “Alexandru Ioan Cuza” University, Iași as of October 26, 1890. He acknowledged during his entire life his distinguished professors P. Poni, P. Bujor, A. Popovici, I. Simionescu, A. Obregia.

In 1900 he graduated in natural sciences from the “Al. I. Cuza” University, Iași, and, one year later, became a “*preparator*”¹ at Professor Paul Bujor’s Chair of Zoomorphology. His evident vocation led him to receive a “*Vasile Adamachi*”² scholarship and went to Paris where he studied at the Sorbonne, got a diploma in Sciences (1903) and a doctorate in natural sciences (1905). His doctoral thesis *Recherches sur le système uro-génital des Elasmobranches*, was directed by the

¹ Person who, in European universities, sets up equipment on the professor’s teaching desk for the upcoming lecture.

² Prestigious Moldavian scientific and cultural Foundation.

prominent biologists Yves Delage and Edouard Hérourard. He graduated with the mention “*très honorable*”. Y. Delage mentioned in his official report: “*par un travail acharné, qui a duré quatre ans sans répit, Jean Borcea est arrivé à donner une solution qui paraît être définitive, à la plupart des problèmes posés dans la thèse qu’il s’est proposée ...*”.

His initiation to marine sciences took place at the Marine Biological stations of Roscoff and Banyuls-sur-Mer in France and at the Naples Zoological Station in Italy; he always kept, as other prestigious Romanian scientists did, the imprint of both Romanian and French schools.



Fig. 1. – Prof. Ioan Borcea (1879–1936).

Back in Iași he became an associate professor (1906), then a lecturer (1909) and full professor (1912) of the Chair of Zoology at his *alma mater* the “Al. I. Cuza” University in Iași.

As scientist, I. Borcea asserted himself in various fields of the biological sciences, namely fish anatomy and embryology, crustaceans, applied entomology

and, mainly, marine biology. He has his place in the history of science as an important Black Sea fauna specialist.

Besides his major merit as the founder of the first Romanian marine biological research station, I. Borcea was also Dean of the Faculty of Natural Sciences of the “Al. I. Cuza” University, Iași, director of the Museum of Natural History of Iași, and in the public life a member of the [political] Rural Party (1919) and subsequently minister of Cults and Public Instruction in the Vaida Voievod cabinet between 1919 and 1920 (Minerva, 1929). I. Borcea is a founding member and editor of the scientific journal “*V. Adamachi*”, editor of “*Annales scientifiques de l’Université de Iassy*”. He belonged to several learned societies: he was a corresponding member of the Romanian Academy, founding member of the Academy of Sciences of Romania, corresponding member of the famed “Museums” of Natural Sciences in Paris and New York, member and honorary president of the Zoological Society of France, *doctor honoris causa* of the University of Montpellier (France), honorary member of various national and foreign scientific societies. The French Government made I. Borcea knight of the “Légion d’honneur”. As an invited speaker he participated in marine biology conferences in France (Paris, Lyon, Marseille, Grenoble, Dijon) in 1935.

Sadly Professor I. Borcea passed away at the height of his creative power, victim of a septicemia he developed at Agigea, on July 30, 1936, and was buried in Racova, in his family’s vault.

Many testimonies of his coworkers and disciples recall with admiration, devotion and emotion the exceptional qualities of I. Borcea as a scientist, teacher and patriot (e.g., Cărbășu, 1959; Macarovici, 1966; Mustață *et al.*, 1969): two quotations about the founder and the Marine Zoological Station from its “Golden Book” come to mind: “*J’ai trouvé, à la Station Zoologique Maritime d’Agigea, dirigée par le professeur Ioan Borcea avec un admirable esprit d’organisation, une atmosphère de rare cordialité, imprégnée d’un sentiment de solidarité, que j’ai rarement rencontrée ailleurs. Grâce au professeur Borcea, à ses collaborateurs et aux jeunes chercheurs que j’ai rencontrés à la Station, je suis arrivé à compléter mes connaissances de cytologie, à amasser un matériel fort utile, qui facilitera mes travaux sur le fonctionnement du neurone ...*” (Professor Gheorghe Marinescu³, le 25 août 1935), and “*Il me semble que ce soit une station zoologique extrêmement réussie et, certes, elle accomplit sa mission de station dirigeante dans les Balkans*” (Homer A. Jack, M.S.⁴, le 5 décembre 1938).

A memorial house in Racova (Bacău county) was dedicated to I. Borcea in 1966 and several schools in Romania bear his name nowadays.

³ The most important Romanian neurologist (1863–1938), member of the Romanian Academy and of many foreign medical academies and societies.

⁴ Cornell University, Ithaca N.Y., USA, delegate of the Science Education Department for the Study of European maritime stations

THE MARINE ZOOLOGICAL STATION AT AGIGEA 1926–1956

The first scientific, organizational and patriotic merit of I. Borcea is doubtlessly the creation on the Romanian Black Sea coast (Fig. 2) of the Marine Biological Station

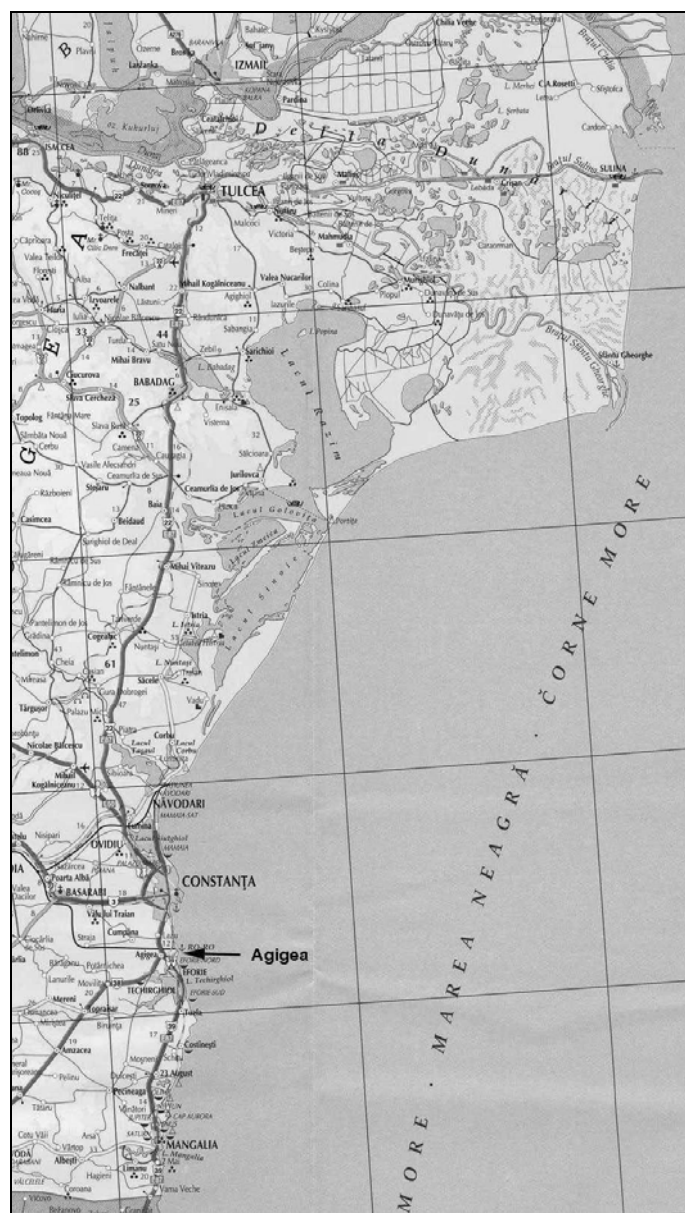


Fig. 2. – Location map of Constanța and Agigea along the Romanian Black Sea coast.

“King Ferdinand I” by High Royal Decree No. 810 of March 1, 1926, the first such kind of institution in Romania, at Agigea, about 15 km south of Constanța. He became and remained until his death its first director. At the 30th anniversary of the Station (1956) and upon Professor Radu Codreanu’s suggestion, the founder’s name was attributed to the Station (Marine Zoological Station “Prof. Ioan Borcea”), which belonged for a while to the Romanian Marine Research Institute (RMRI) in Constanța (1970–1999); today the Marine Biological Station “Ioan Borcea” is again administrated by the “Al. I. Cuza” University Iași (Fig. 3).



Fig. 3. – The “Prof. Ioan Borcea” Marine Zoological Station, Agigea.

The founder commented during the first congress of naturalists in Romania (1929), on the importance given to the marine fauna along the Romanian Black Sea coast, which generated the founding of the Station that had encountered many difficulties: *“Nous rappelons aussi le fait que la mer Noire et le delta du Danube sont les endroits de prédilection pour les esturgeons, si rares en Europe occidentale et si importants du point de vue économique; il en est de même pour d’autres espèces de poissons migrateurs, tels que les Caspialoses, les harengs, les anchois, les maquereaux, les saurels, les pélamides, etc. qui nous intéressent particulièrement au point de vue économique; nous rappelons, également, qu’en dehors des moules fixées sur les rochers, la mer Noire contient d’immenses bancs de moules qui vivent à de plus grandes profondeurs (20 mètres) et représentent des formations spécifiques à la mer Noire. Notons, aussi, la possibilité de faire de l’ostréiculture. Toutes ces considérations m’ont déterminé à rechercher un emplacement convenable pour l’établissement d’un institut de recherche scientifique sur la faune de la mer Noire, qui vit en face de notre littoral. L’endroit que j’ai choisi a été Agigea; il y avait un cap avancé dans la mer et une installation de pêche au talian.”*

The 30th anniversary celebration of the Station's founding coincided with the commemoration of 20 years of the founder's death.

The most significant achievements of the Station were summarized in the "balance sheet" of these first 30 years of activity (cf. Căraușu, 1959):

a) development of scientific research in various fields and under several aspects, such as: physical and chemical oceanography; qualitative composition of marine flora and fauna along the Romanian littoral; main biological characteristics of economically valuable marine fish; comparative animal morphology and anatomy; animal physiology and eco-physiology; taxonomic revisions of some zoological groups; capitalization of marine fisheries; marine microbiology; study of littoral (para-marine) lakes; observations on geology, pedology, terrestrial flora and fauna (insects, birds, mammals) in the Station's vicinity; nature protection; natural reserve of maritime dunes (with *Ephedra distachya*) declared as "monument of nature" (*Journal of Ministries Council* No. 142 / 1939);

b) improvement of endowments (crafts and ships – initially the small boat "Posidonia", followed, after 1940, by the larger "Sagitta" and "Noctiluca", and lastly by the R/V "Gilortul" – Fig. 4), sampling equipment, laboratory instruments, fishing gear, furniture);



Fig. 4. – R/V "Gilortul".

c) laboratory diversification, photographic workshop, library⁵;

d) first specialists in different fields of marine hydrobiology;

e) scientific co-operation at local (Marine Research Station Constanța – Tăbăcărie, later Marine Fishery Station "Dr. Grigore Antipa", part of the RMRI

⁵ The Prof. I. Borcea book donation, owing to Dr. Lucia Leon-Borcea, which represented the initial fund, included 3,000 volumes.

between 1970 and 1999), national (Universities of Iași, Bucharest, Cluj-Napoca) and international level (Academies of Science of the former USSR and Bulgaria);

f) participation in scientific events (e.g., sessions at the “Al. I. Cuza” University, Iași);

g) publication of scientific papers in Romania and abroad (in *Lucrările Stațiunii Zoologice Marine “Prof. Ioan Borcea” Agigea* (edited by Prof. Constantin Motaș since 1938), *Analele Științifice ale Universității Iași*, *Studii și Cercetări ale Academiei R.P.R.*, *Buletinul Institutului de Cercetări Piscicole*, *Natura*, *Revista Științifică “V. Adamachi”*, *Buletinul Institutului Politehnic “G. Asachi”*, *Bulletin du Muséum d’Histoire Naturelle Paris*, *Bulletin de l’Institut Océanographique de Monaco*, *Zoologischer Anzeiger*);

h) ensuring of accommodation for indigenous⁶ and foreign research personnel (e.g., from the former USSR, Bulgaria, Yugoslavia, Hungary, former Czechoslovakia, Poland, France, Germany, Sweden and USA);

i) teaching activities (courses, summer student training for all Romanian universities for in-depth studies of Black Sea life, training courses in museology for high school teachers of natural sciences, marine plants and animal collections for schools, universities, museums);

j) public awareness nurturing (Station’s museum, conferences, brochures, pamphlets).

The chronicle of the jubilee scientific session dedicated to the first three decades of the Station (Motaș, 1959) has been published as a *Festschrift*, with the help of the Ministry of Education, under the auspices of the *Scientific Annals of the “Al. I. Cuza” University, Iași*.

1956–1966

Ten years later, another scientific session, organized by the Faculty of Biology and Geography of the “Al. I. Cuza” University, Iași at Agigea, held on November 1 and 2, 1966, celebrated 40 years of the founding and commemorated 30 years of the decease of its founder; among the numerous papers presented at this session, those dealing with Black Sea biota, evolution of the Station and the flora and fauna of Dobruja were published in an “anniversary volume”.

The main scientific and didactic results achieved by the Station were reviewed for the period 1956–1966 by Andriescu (1966): completion of facilities (building / accommodation capabilities, technical installations, vehicles, research boats, library); increase of scientific personnel (46 members); development of scientific research (physical-chemical oceanography, marine biology and zoology, marine-animal physiology, marine radiobiology, others); 39 scientific publications; national (Iași,

⁶ Some of the most prestigious Romanian scientists, i.e. Profs. G. Brătescu (geology), I. Simionescu (paleontology), C. Călugăreanu (physiology), G. Marinescu (neurology), I. Scriban and I. Ciurea (ichthyopathology) and P. Bujor (Tekirghiol Lake), were hosted; they substantially contributed to the work at the Station.

Bucharest, Cluj-Napoca, Timișoara, Galați) and international co-operation (Belgium, Germany, Denmark); didactic activities (student practice, training courses for high school teachers, museum collections); fostering of public awareness.

Thus the prior sound efforts devoted to this multidisciplinary research and teaching organization, pursued after the founder's disappearance, made possible the successful continuation of its traditional activities and perennity in spite of all human and historical vicissitudes. The work was shouldered by C. Motaș, I. G. Botez, S. Cărbășu, P. Borcea, I. Suci, N. Gavrilăscu and I. Andrieșcu.

1969, 1970, 2001

1969 is a benchmark for the history of the Station: the organization of a first international course on the Black Sea's brackish waters by Prof. E.A. Pora in collaboration with the Mediterranean Association of Marine Biology and Oceanography (MAMBO), followed by publication of the lectures in the two-volume *Biologie des eaux saumâtres de la Mer Noire* (Pora and Băcescu, 1977).

In 1970⁷ the Station was incorporated, together with other preexisting marine research units along the Romanian Black Sea coast, into the RMRI (Bologa, 1995, 1999, 2003, Bologa *et al.*, 1994), and transformed in 1999 into the present National Institute for Marine Research and Development (NIMRD) "Grigore Antipa" Constantza (Fig. 5).



Fig. 5. – Main building of the Romanian Marine Research Institute / the "Grigore Antipa" National Institute for Marine Research and Development.

⁷ The first author spent himself 10 years (1970–1980) of activity at Agigea, meeting, experiencing and guiding distinguished scientists at the Station, to the beach and around the natural reserve: Dr. Lecturer Maria Celan (1898–1989), Professor Eugen A. Pora (Cluj-Napoca) (1909–1981), Professors Petre T. Frangopol and Ioana Pana (Bucharest), Professor Roger H. Charlier (Northeastern Illinois University and Free University of Brussels), Dr. Robert Ward (UK), and others since 1990: Dr. David G. Aubrey (USA), Dr. Allan Walton (Canada).

Fortunately, on June 28, 1990, after 20 years, the Station was reattributed to the “Al. I. Cuza” University Iași (Mustață, 1996) except for some hectares of the adjacent natural reserve (lost to the Danube-Black Sea canal inaugurated on May 28, 1984). The station’s “marine” library remained in possession of the NIMRD.

Credit is due Professor Gheorghe Mustață, the “Al. I. Cuza” University, Iași, the Faculty of Biology and its recovered Station, together with the NIMRD and the “Ovidius” University, Constanța, the Faculty of Natural Sciences, for the 70th anniversary of the Station, at which he organized the scientific session “The Black Sea in balance”, at Agigea, between October 18 to 20, 1996 (Mustață, 1996).

The session included six sections (Plant diversity, morpho-anatomy and physiology, Animal morpho-anatomy and physiology, Animal bio-diversity, Aquatic biology, Ecology and sustainable development, Genetics, Microbiology and Biochemistry) and a poster session.

The event (Bologa, 2002), attended by about 180 people from various universities, research institutes and museums, from Romania and the Republic of Moldova, included the bestowing of a honorary diploma and a jubilee medal to former and present scientists who contributed to the achievements, prestige and recognition of the Station.

The essential contributions of the Station to the development of Romanian biology and oceanology were often evoked at various national and international jubilee events (*e.g.*, Cărașu, 1957, 1959, 1966; Andriescu, 1966; Mustață, 1996; Băcescu and Meșter, 1996; Bologa, 2003).

THE NATURAL HISTORY MUSEUM OF IAȘI

The Natural History Museum founded by Dr. Iacob Czihaç (1800–1888), was created in Iași, through the initiative of the members of the Society of Physicians and Naturalists, on February 4, 1834. As a cultural institution, the main purpose of the museum consisted in the presentation to the public of exhibits of underground resources, flora and fauna from Moldavia and other parts of the world (Mândru, 1996).

To an initial period of blossoming (until 1860), an evident decline (that lasted some 50 years) set in until the leadership of the museum was taken over by I. Borcea in 1912.

The appointment as the director of the museum, the same year that he became Professor, was due to the report of G. Antipa, director of the Natural History Museum of Bucharest (which, on its centennial celebration, on King Carol II’s recommendation, would be given his name on May 23, 1933), after his visit in Iași in 1902. The alarming situation, encompassing a deficient organization and the unsatisfactory state of the collections, had been transmitted to the Ministry of Cults and Public Instruction (MCPI). Consequently, at its request, the Society of Physicians

and Naturalists proposed, by its Decision No. 11 from February, 1912, that as an appropriate specialist, I. Borcea, be appointed director on April 11, 1912. In this quality, too, he gained a real reputation as a museologist; his erudition and dynamism contributed decisively to the recovery and ensuing progress of the museum.

The revival of the museum under the leadership of I. Borcea was made possible by his successful fund raising from the MCPI for acquisition of new exhibits (from Romania and the Wilhelm Schlüter House from Halle, Germany), creation of a restauration workshop, hiring of a full time specialist and of assistants from the Chair of Zoology for identification and labeling of collections, which when adequately organized, could then be shown to the public. Since 1926, the Marine Zoological Station Agigea, founded by the manager himself, helped to enrich the collections with valuable exhibits of Black Sea fauna. Ample reconstruction works of the museum building were finalized in 1932 in preparation for the centennial celebration of the Society's founding (1933).

SUMMARY OF SCIENTIFIC AND DIDACTIC CONTRIBUTIONS

The personality and professional achievements of I. Borcea were the subject of studies by various Romanian researchers (cf. Cărbăușu *et al.*, 1966, Mustață *et al.*, 1996), but – to the first author's knowledge – only one related paper was published abroad, viz. in the former *Bulletin* of the Commission Internationale pour l'Exploration Scientifique de la Mer Méditerranée – CIESM (Cărbăușu, 1957).

The scientific and didactic results, synthesized on the occasions of the 40th and 70th anniversaries of the Marine Zoological Station (Cărbăușu *et al.*, 1966; Mustață *et al.*, 1996), may be summarized as follows:

- pioneer of the Romanian marine biology (together with E. Racovitza and G. Antipa);
- valuable scientific contributions in different fields of zoology: faunal systematics / taxonomy, entomology, general biology, marine hydrobiology, marine ecology, zoogeography, history of biology, philosophy of science;
- promoter of the theory of evolution in biology;
- zoology courses, marine biology training and introduction of general biology in Romanian High Education;
- organiser of scientific research;
- creator of a scientific school in marine biology;
- methodological contributions (biological combat of noxious insects);
- humanist and *animateur* of the young generation;
- important role in increasing and accelerating social progress in Romania.

Nearly complete compilations of I. Borcea's publications were performed by S. Cărașu (1959), S. Ghiță (1961), S. Cărașu *et al.* (1966), P. N. Laking (1974), and, more recently, F. Porumb (1999–2000).

Romania has produced several distinguished marine biologists and has gained its laurels in this domain, and naturally particularly in regard of the Black Sea. The means have always been rather modest, yet the contributions to the science have been significant. Among the names that have illustrated those achievements, that of I. Borcea deserves to be highlighted.

REFERENCES

- Andriescu I., 1966, Dix ans d'activité de recherche et d'enseignement à la Station de Biologie Marine "Prof. Ioan Borcea" d'Agigea (1957–1966). *Lucr. ses. șt. St. Cerc. Mar. "Prof. Ioan Borcea" Agigea (1–2 noiembrie 1966)*, 1–49.
- Anonymous, 1929, *Minerva. Enciclopedia Română*. Ed. Comit. de red. al Enciclop. Române Minerva, Cluj, 974 p.
- Băcescu M.C., Meșter L.E., 1996, La Station Zoologique Marine "Prof. Dr. Ioan Borcea" d'Agigea revenue dans son ancien territoire. *Marea Neagră în cumpănă*, Univ. "Al. I. Cuza" Iași, *Lucr. ses. șt., Agigea–Constanța*, 18–20 oct., 41–45.
- Bologa A.S., 1995, 25 years from the founding of the Romanian Marine Research Institute. Jubilee Symposium RMRI, Constanța, September 15, 1–11.
- Bologa A.S., 1999, Marine research and fight against pollution. *Constanța, What, Where, When*, 1, 2, 5.
- Bologa A.S., 2002, History of the marine science in Romania. *History of Oceanography*, IUHPS, Newsletter Comm. Oceanogr., 14, September, 18.
- Bologa A.S., 2003, Developments of marine biological institutions around the Black Sea: An overview. In *Ocean sources bridging the millennia – A spectrum of historical accounts*, ICHO VI Proceedings, UNESCO, Paris, 53–64.
- Bologa A.S., Cociasu A., Diaconu V., Mihnea R., Nicolaev S., Panin G., Tiganus V., 1994, Romanian involvement in Black Sea research. In *Black Sea Research. Country Profiles*, UNESCO / IOC, 3, Paris, 45–79.
- Cărașu S., 1957, La Station Zoologique Maritime d'Agigea. *Bull. de Liaison des Labor. Commiss. Int. Explor. Sci. Mer Médit.*, 8, Banyuls-sur-Mer.
- Cărașu S., 1959, Trente années depuis la fondation de la Station Zoologique Maritime d'Agigea et vingt années depuis la mort de son fondateur, le professeur Ioan Borcea. *Lucr. ses. șt. St. Zool. Mar. "Prof. Ioan Borcea" (15–17 septembrie)*, I–XXXIX.
- Cărașu S., 1966, Rol' Biologicheskoi Morskoi Stantsii Agigea v razvitiu gidrobiologii v S. R. Rumyniya (K sorokoletiu deyatel'nosti stantsii). *Lucr. ses. șt. St. Cerc. Mar. "Prof. Ioan Borcea" Agigea (1–2 noiembrie 1966)*, V, 75–82.
- Cărașu S., Cărașu D., Ghenciu V., 1966 – Contributions à l'histoire de la science en Roumanie: L'œuvre du biologiste Ioan Borcea. *Lucr. ses. șt. St. Cerc. Mar. "Prof. Ioan Borcea" Agigea (1–2 noiembrie 1966)*, 51–74.
- Ghiță S., 1961, Din istoria biologiei generale în România. In *Din istoria biologiei generale*, N. Botnariuc, Ed. Științifică București, 757 p.
- Laking P.N., 1974, *The Black Sea. Its Geology, Chemistry, Biology. A Bibliography*, WHOI, Woods Hole, Massachusetts, 368 p.

- Macarovici N., 1966, Cum l-am cunoscut pe Profesorul Ioan Borcea (Evocările unui fost elev). *Lucr. ses. șt. St. Cerc. Mar. "Prof. Ioan Borcea" Agigea (1-2 noiembrie 1966)*, 321-324.
- Mândru C., 1966, Activitatea Prof. I. Borcea ca director al Muzeului de Istorie Naturală din Iași, *Lucr. ses. șt. St. Cerc. Mar. "Prof. Ioan Borcea" Agigea (1-2 noiembrie 1966)*, 83-86.
- Motaș C., 1959, Cronica sesiunii științifice de la Stațiunea Zoologică Marină de la Agigea. *Lucr. ses. șt. St. Zool. Mar. "Prof. Ioan Borcea" (15-17 septembrie)*, 601-607.
- Mustață G., 1996, The "Ioan Borcea" Station of Biological Marine Research of Agigea. Past, perspectives and future perspectives, *Marea Neagră în cumpănă*, Univ. "Al. I. Cuza", Iași, *Lucr.ses.st., Agigea-Constanta*, 18-20 oct., 23-39.
- Mustață G., Mustață M., Andriescu I., 1996, Ioan Borcea. *Marea Neagră în cumpănă*, Univ. "Al. I. Cuza", Iași, *Lucr. ses. șt., Agigea-Constanta*, 18-20 oct., 279-288.
- Pora E.A., Băcescu M.C. (Eds.), 1977, *Biologie des eaux saumâtres de la mer Noire*, IRCM Constanța, vol. 1+2, 347 p.
- Porumb F., 1999-2000, L'histoire des recherches marines roumaines en mer Noire. *Cercetari marine – Recherches marines*, 32-33, 372 p.