

Phycological Trailblazer

No. 14

Anna D. Zinova

(originally printed in the Phycological newsletter. 2001.
Vol. 37 No. 1)

Anna Dmitrievna Aleksandrova [Zinova] was born in 1902 in the city of Samara, located on a loop of the Volga River, where it reaches its farthest point east and joins the Samara River. Her father worked as a captain of a ship on the Volga; her mother had been a schoolteacher before she got married. That region of the country was devastated following the Revolution and Civil War, and both parents died from hunger in 1920, leaving the teen-aged Anna to care for an 8-year-old sister and a 3-year-old brother. The brother also died of hunger not long after the parents. After her elementary and high school education in Samara (1910-1919), Anna's first job was as a post office worker. By that time she and her sister had moved to Balakovo. She held positions as teacher and clerk in various state organizations. In autumn of 1921 she received official permission to take the examination in Petrograd for admission to the university.

Anna Zinova and a female cousin traveled to Petrograd [to be renamed Leningrad in 1924, the name later reverting in 1991 to the original St. Petersburg] and stayed with their aunt, Elena Stepanova Sinova, a prominent marine phycologist. The story is that Anna, the

smarter of the two cousins, took the entrance exam, left the room, changed into different clothing, and returned to re-take the exam in her cousin's name. Both were admitted to the Institute of Geography. But, by the summer of 1925 Anna had run out of funds and was forced to leave the Institute. She returned to Samara, where her sister was living. Anna worked there from 1925 to 1930 as an accountant in the local government administration dealing with the municipal economy.

In 1930 Zinova returned to Leningrad, where she joined an expedition to investigate iodine-containing algae in the region of Murmansk and the White Sea. The expedition was led by her aunt Elena. Separately from the survey work, Anna carried out independent research on the marine algae from the island of Malij Olenij ("Little Deer"). The results of this study eventually became her first publication. In autumn of the same year she resumed her academic pursuits, enrolling in the Faculty of

Geography in the Leningrad State University [= the State University of St. Petersburg]. In 1931 Anna participated in another expedition led by her aunt, this time to the Sea of Japan. She was able to collect and study brown algae from the region of Vladimir Bay and Olga Bay. It was this exposure to marine algae on these expeditions, along with the helpful guidance from her aunt, that led Anna to



Anna D. Zinova, on the grounds of the Komarov Botanic Institute in Leningrad [now St. Petersburg], July, 1975.

realize that she wanted to pursue marine phycology as her future career.

After her graduation in 1932 Zinova took part in another expedition, this one as an assistant to the geobotanist of the Institute of

Peat. The purpose was to investigate the marshy areas around Karelia in northwestern USSR. Then in Sept. she took part in an expedition organized by the Ministry of Light Industry in Leningrad. She was able to study marine algae from Kandalaksha Bay, the White Sea. In the period from the end of 1932 until March of 1933, she worked with the State Hydrological Institute. Her responsibility was to write sketches on the algae from the Gulf of Finland, as well as the White, Kara, and Bering seas and the seas of Okhotsk and of Japan. Although she composed a total of 6 essays, only one was published, that on the algae of the Gulf of Finland. This research was instrumental in exposing her to the world's literature on marine algae, and it caused her to start her serious interest in compiling a bibliography on algal literature.

From June of 1933 to March of 1935 Zinova worked as a hydrobiologist in the lab of the Leningrad Biological Administration (Hydrometeorological Management) with responsibility for studying the phytoplankton of lakes and rivers. This job meant expeditions to the Monche lakes and the rivers and tundra in the region around Leningrad. Results of these studies on the phytoplankton, macrophytes, and zoobenthos resulted in a publication in 1935. But this lab was shut down in the same year. Fortunately for Zinova, she was able to start a job as a specialist in algae in the Department of Cryptogamic Plants, the Komarov Botanical Institute, Leningrad. This became her permanent job. When Anna entered it, the Department was headed by her aunt. Anna visited many regions of Russia where the algae had not previously been collected or studied,

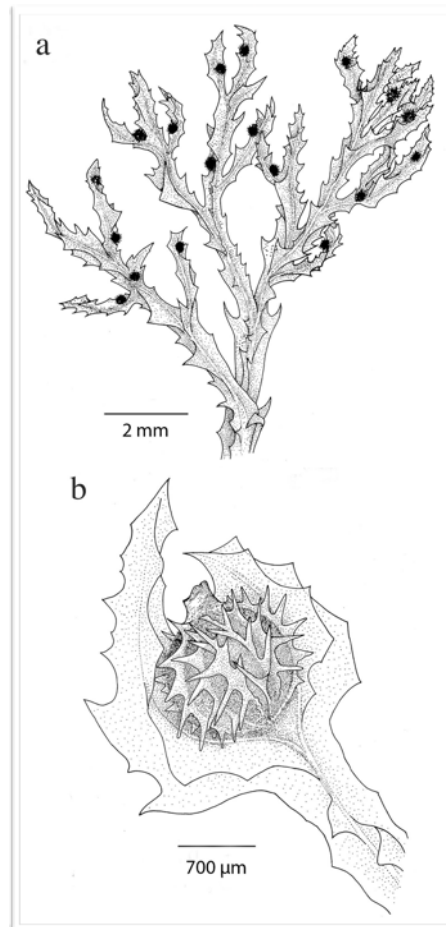


Fig. 1. *Zinovaea acanthocarpa* M.J. Wynne. Cystocarpic thallus and a single cystocarp with elaborate pericarp. [From Wynne, 1970.]

such as the northern, southern, and eastern shores. She also studied the algae of the White and Barents Seas, at times describing new taxa. Having accumulated ample material from these collecting trips, she was able to carry out a meaningful study of the systematics of various groups. Her initial group for study was brown algae. At that time there were no synthetic studies on Russian algae but many small-scale studies. Gradually Anna Zinova became recognized as a specialist in her field, often being sent materials to be determined.

At the same time Anna was working at the Komarov Institute, she also had an appointment, starting in 1936, with the Laboratory of Hydrobiology of the State University of St. Petersburg. She was a graduate student in the period 1939-1943. During World War II Leningrad was subjected to a blockade, the infamous "900-day siege", causing unbelievable hardship,

with no food and no heat. Countless citizens died of hunger, including Elena Sinova in 1942. It was during the War that Anna Zinova managed to continue her studies on the taxonomy and the distribution of seaweeds. In 1945 she completed her Candidate's thesis "On the algae from the White, Barents, and Kara Seas, their relationships and origins". In this thesis she discussed basic principles of methods for biogeographical analyses. Following the death of her aunt, Anna Zinova emerged as the pre-eminent marine phycologist in the country. The main contributions by Zinova were on the floristics of the brown and red algae of the northern seas (Barents, White, and Kara), the far-eastern seas (Japan, Okhotsk, and Bering),

and the southern seas (Black, Azov, and Caspian). She published two books on the brown (1953) and red (1955) algae of the northern seas of the Soviet Union. These books still remain important compilations. She also published on collections that she received from the Antarctic and Subantarctic regions (1963, 1964, 1973). Zinova had a broad view of the distribution of algal species in the world's oceans, and she contributed her ideas on phytogeography by comparing the composition of the floras from these various regions.

In 1967 she published her study of the green, brown, and red algae from the southern seas of the USSR, i.e., the Sea of Azov and the Black and Caspian seas, based on her own collections made in 1951 and 1952. This work was the basis for her earning a doctoral degree. The bibliography that she still maintained included a subject break-down, such as distribution, green, brown, and red algae, list of new taxa, etc. This catalogue was based on the algal literature of the world. She was given the title of Chief of the Marine Algology Group at the Komarov Botanical Institute of the USSR Academy of Sciences. Although Anna Zinova did not teach, she greatly influenced the next generation of Russian marine phycologists. In fact, all Russians entering this field from the early 1960's through the 1980's were in essence her students. Zinova carried on an active correspondence not only from within the Soviet Union but with colleagues from more than 40 countries. Such correspondence with the outside world was not encouraged at that time, but such a narrow attitude did not deter Zinova. This helped her maintain her compilation of the literature, which was not available elsewhere in the country. These books and reprints are now housed in the Department of Algae in the Komarov Botanic Institute.

In 1944 Anna married Vasilij Grigorievich Aleksandrov, a fellow employee in the Institute. Although she took his surname, she retained "Zinova" in her professional career. The couple had one daughter. Anna was active in various other pursuits, such as with a civilian defense unit and in working toward the liquidation of

illiteracy. She was also a union activist. During the War she gathered sphagnum moss for use as bandages and helped in building defense structures. She served as a hospital nurse and stood on duty during air-raids. She once fell on the street in the winter, and an unknown woman helped her walk to work, which saved her from freezing to death on the street.

In 1970 Anna Zinova retired, but she continued consulting until 1973. It was in 1975 during the XIIth International Botanical Congress that at the invitation of Louise P. Perestenko I had the opportunity to visit the Komarov Botanic Institute. This Institute has its origins going back to 1714, when Peter the Great founded a Pharmaceutical Garden in St. Petersburg, at the time the city was becoming the capital of Russia. The Institute itself goes back to 1931 when there was a merger of the [Imperial] Botanic Garden and the Botanical Museum of the Academy of Sciences of the USSR (Shetler, 1967). On a sunny Sunday, I met and chatted with Drs. Perestenko, Vera B. Vozzhinskaya, and Anna Zinova. While we ate cucumber slices with bread and sipped hot tea, the ladies proudly displayed an original of the elephant-folio *Illustrations Algarum* (1840) by Postels and Ruprecht. Dr. Zinova also related the terrible time of the siege when they were forced to consume the herbarium paste, made up of flour and water, to survive.

In her retirement Zinova kept in contact with colleagues around the USSR and the world. She passed away on Sept. 13, 1985. Despite her humble origins and despite the many challenges she faced throughout her life, she was a major figure in phycology of the 20th Century.

A distinctive member of the Delesseriaceae from the Aleutians was named *Zinovaea* (*Z. acanthocarpa*) (Fig. 1) by Wynne (1970) in honor of Anna Zinova and her many contributions to our understanding of this red algal family in the North Pacific.

Blinova, E. I., & A. D. Zinova 1967. Species nova Rhodomyeniae e parte septentrionali-orientali Maris Ochotnsis. Norvitates System. Plant. non Vascul. 1967: 107-109.

- Makijenko, V. F., & A. D. Zinova. 1976. Ad investigacionem Nienburgiae angustae A. Zin. (Rhodophyta, Delesseriaceae). *Novitates System. Plant. non Vascul.* 13: 31-39.
- Shetler, S. G. 1967. *The Komarov Botanical Institute. 250 Years of Russian Research.* Smithsonian Institution Press, Washington, D. C. xiv + 240 pp.
- Vinogradova, K. L. 1990. Zinova's readings in the Botanical Institute of the Academy of Sciences of the USSR (Leningrad). *Botanicheski Zhurnal* 75: 132-133.
- Vinogradova, K. L., & O. V. Yakovleva. 1997. Anna Dmitrievna Aleksandrova (Zinova) (to her 95th birthday). *Botanicheski Zhurnal* 82(12): 117-124.
- Wynne, M. J. 1970. Marine algae of Amchitka Island (Aleutian Islands). I. Delesseriaceae. *Syesis* 3: 95-144.
- Zinova, A. D. 1948. [On some species of the genus *Porphyra* on the Murmansk coast and the White Sea with a new species *Porphyra helenae* Zin.]. *Botanicheski Zhurnal* 33: 440-442.
- _____. 1950. [On certain features of the algal flora of the White Sea.] *Akad. Nauk SSSR, Trudy Vsesoiuznogo Hidrobiologicheskogo Obshchestva* 2: 231-251.
- _____. 1953a. *Opredelitel' burykh vodoroslej severnykh morej SSSR.* [Manual for identification of the brown algae of the northern seas of the USSR.] *Akad. Nauk SSSR. Moscow and Leningrad.* 224 + [1] pp.
- _____. 1953b. De alga Rhodophytica nova e genere *Halosaccion*. *Notulae Systematicae ex Instituto Cryptogamico, Horti Botanici Petropolitani* 9: 93-95.
- _____. 1954. [New family, genus and species of brown algae.] *Trudy Komarov Bot. Inst., Akad. Nauk SSSR, ser. 2,* 9: 223-244.
- _____. 1955. *Opredelitel' krasnykh vodoroslej severnykh morej SSSR.* [Manual for identification of the red algae of the northern seas of the USSR.] *Akad. Nauk SSSR. Moscow and Leningrad.* 220 pp.
- _____. 1957. [Seaweeds of the eastern part of the Soviet sector of the Arctic.] *Akademia Nauk SSSR, Trudy Inst. Okeanol.* 23: 146-167.
- _____. 1958. [A contribution to the knowledge of the species of the genus *Sphaerotrichia* Kyl.] *Botanicheski Zhurnal* 43: 1462-1469.
- _____. 1959. [On two brown algae from the Antarctic—*Phyllogigas* and *Himantothallus*.] *Botanicheski Zhurnal* 44: 372-379.
- _____. 1960a. Species novae algarum e Mari Japonico. *Botanicheskiye Materialy* 13: 113-117.
- _____. 1960b. De alga *Chordaria megallenica* Kylin in parte septentrionali Oceani Pacifici inventa. *Botanicheskiye Materialy* 13: 117-118.
- _____. 1961a. De alga rubra *Dilsea integra* (Kjellm.) Rosenv. notula. *Botanicheskiye Materialy* 14: 82-86.
- _____. 1961b. [List of maine algae collected by A. A. Birulev at Spitsbergen Island]. *Botanicheskiye Materialy* 14: 86-87.
- _____. 1961c. [Algae of the Mezen Bay (White Sea)]. *Botanicheskiye Materialy* 14: 87-90.
- _____. 1962. Species generis *Rhodoglossum* J. Ag. ad oras Sovieticas Oceani Pacifici. *Botanicheskiye Materialy* 15: 70-74.
- _____. 1963. Delesseriaceae apud insulas Kerguelen et Macquarie. *Botanicheskiye Materialy* 16: 52-67.
- _____. 1964a. The composition and character of the algal flora at the Antarctic coast and in the vicinity of Kerguelen and the Macquarie Islands. *Soviet Antarctic Expedition Information Bulletin* 1: 123-125. [translation of her 1958 paper in *Inform. Byull. Soviet Antarct. Eksped.* 3: 47-49.]
- _____. 1964b. Species nova Laminariae apud oras insulae Sachalin. *Novitates System. Plant. non Vascul.* 1964: 125-126.
- _____. 1964c. Algae nonnullae e Mari Nigro e collectione Professoris Hausknechtii. *Novitates System. Plant. non Vascul.* 1964: 127- 132.
- _____. 1965. Species familiae Delesseriacearum (Rhodophyta) in parte Septentrionali Oceani Pacifici. *Novitates System. Plant. non Vascul.* 1965: 78-97.
- _____. 1966. *Novitates de algis marinis antarcticis ac subantarcticis.* *Novitates System. Plant. non Vascul.* 1966: 103-109.
- _____. 1967a. [Green, brown, and red algae of the southern seas of the U. S. S. R.] [Publishers] *Nauka. Moscow and Leningrad.* 398 pp.
- _____. 1967b. List of marine algae of southern Sakhalin and the southern Kurile Islands. [Translated by M. Slessers]. *CFSTI AD-653 067.* 9 pp.
- _____. 1969. *Additamenta ad commentationem de specie Laminariae nova ex insula Sachalin.* *Novitates System. Plant. non Vascul.* 6: 65-68.
- _____. 1970. *Novitates de algis marinis e sinu Czaunskensi (Mare Vostoczno-Sibirskoje dictum).* *Novitates System. Plant. non Vascul.* 7: 102-107.
- _____. 1972a. Species familiae Delesseriaceae (Rhodophyta) in parte septentrionali Oceani Pacifici. *Novitates System. Plant. non Vascul.* 9: 65-82.
- _____. 1972b. Species Rhodophytorum novae et curiosae e maribus orienti extremi URSS. 1. *Novitates System. Plant. non Vascul.* 9: 82-87.

- _____. 1973. Algae marinae e sinu Hopeful Insulae Kerguelen. *Novitates System. Plant. non Vascul.* 10: 44-49.
- _____. 1976. Species familiae Delesseriaceae (Rhodophyta) in parte septentrionali Oceani Pacifici. 3. *Novitates System. Plant. non Vascul.* 13: 7-10.
- _____. 1981. De positione systematica Nitophylli (Myriogrammes) yezoensis (Yamada et Tokida) Mikami (Delesseriaceae). *Novitates System. Plant. non Vascul.* 18: 10-15.
- Zinova, A. D., & I. S. Gussarova. 1977. Species *Kallymeniopsis* Perest. (Crossocarpaceae, Rhodophyta) prope Insulae Kurilenses (Urup et Simuschir). *Novitates System. Plant. non Vascul.* 14: 24-28.
- Zinova, A. D., & A. A. Kalugina. 1974. Ad systema specierum generis *Cystoseira* Ag. in Mari Nigro. *Novitates System. Plant. non Vascul.* 11: 116-125.
- Zinova, A. D., & V. F. Makijenko. 1972. Species nova generis *Phyllophora* (Rhodophyta) e Mari Japonico. *Novitates System. Plant. non Vascul.* 9: 60-64.
- Zinova, A. D., & L. P. Perestenko. 1964. Algae rubra nova parasitica e Mari Caspico. *Novitates System. Plant. non Vascul.* 1964: 132-138.
- ____ & _____. 1974. A list of marine algae inhabiting the intertidal zone of the Kurile Islands. *Acad. Sci., USSR, Far East Sci. Center, Inst. Mar. Biol. Translation 1*: 332-338.
- Zinova, A. D., & V. B. Vozzhinskaya. 1960. De alga *Chordaria magellanica* Kylin in parte septentrionali Oceani Pacifici inventa. *Botanicheskiye Materialy* 13: 117-118.
- Zinova, A. D., & E. B. Zaberzhinskaya. 1965. Species algarum pro Mari Caspico novae. *Novitates System. Plant. non Vascul.* 1965: 97-100.
- ____ & _____. 1966. Algae novae ac curiosae Maris Caspici. *Novitates System. Plant. non Vascul.* 1966: 109-114.
- ____ & _____. 1968. Species Rhodophytorum Maris Caspici novae. *Novitates System. Plant. non Vascul.* 1968: 28-33.

I gratefully acknowledge Dr. Kira L. Vinogradova of St. Petersburg for providing me with information on the life of A. Zinova, Dr. Yuri B. Okolodkov for his helpful comments, and Mrs. Svetlana Rudnicka of Varna, Bulgaria, for translating Russian into English. Mrs. Margarita Barvinok (Dept. of Biology, Univ. of Michigan) also contributed some of her insights.