

UDC 929:597.2/.5

TRIBUTE TO A WONDERFUL PERSON AND ICHTHYOLOGIST, LIDIYA OVEN

© 2025 T. Bagnyukova¹ and A. Pashkov²

¹Fox Chase Cancer Center, Philadelphia, PA, USA

²Azov–Black Sea branch of the FSBSI “VNIRO” (“AzNIIRKh”), Rostov-on-Don, Russian Federation

E-mail: pashkovan@azniirkh.vniro.ru

Received by the Editor 18.11.2024; after reviewing 18.11.2024;
accepted for publication 25.12.2024.

Lidiya Oven, a remarkable person and brilliant ichthyologist, passed away in January 2021. She contributed much to ichthyology, especially to investigation of fish reproductive biology, by building and developing the methodological principles for studying oogenesis and reproduction of portion-spawning marine fish. Her human and personal qualities are no less important to us. We, her former graduate students, would like to honor her memory with this informal obituary. We both were graduate students in difficult times: in the early 1990s, when a decision to become a scientist was not trivial in itself. Lidiya Oven supervised our first steps in science and taught us to analyze the biological processes on our own; her contribution to the shaping us as researchers was invaluable. With this publication, we would like to remind about this wonderful person to new generations of young biologists.

Perhaps it is true that nothing worth knowing can be taught—
all the teacher can do is [to] show that there are paths.

Richard Aldington, 1933

Lidiya Oven (nee Egurazdova) was born on 6 May 1930 in Pervomaysky village in the Gorky region (today, Nizhnegorodsky region). Her father was a CPSU (Communist Party of the Soviet Union) representative and trade union steward, while her mother was a homemaker, who raised five children.

In 1953, L. Oven defended her diploma thesis, *Migration of embryos and larvae of pelagophilic fishes in the Amur River near Yelabuga in the summer of 1952*, and graduated Lomonosov Moscow State University (MSU) with a specialist degree in zoology–ichthyology from the Department of Ichthyology in the Faculty of Biology and Soil Science, thus launching her long scientific career studying the reproductive biology of fish.

There are ten graduates from the Department of Ichthyology in 1953 listed on the MSU website (http://ichthyology.msu.ru/?page_id=84): Yuriy Yurovitskiy, I. Vasil'yeva, D. Arrojo Bueno, Al'vina Matveeva, Boris Vronsky, V. Mityushkin, Petr Borogoditsky, **Lidiya Egurazdova (Oven)**, Elza Pompik (Kalinina), and Juanita Montes Kanad.

After working for nearly a year in her native department of ichthyology at MSU, L. Oven moved to the Crimea in 1954 [[To the memory of Lidiya Oven, 2021](#)] and started her work at the Karadag Biological Station. Today, it is formally known as the T. I. Vyazemsky Karadag Scientific Station;

it is a nature reserve of the Russian Academy of Sciences (RAS) and branch of the A. O. Kovalevsky Institute of Biology of the Southern Seas of RAS (IBSS).

After the Second World War, the Karadag Biological Station became known for its marine research in the Soviet Union. Konstantin Vinogradov, an outstanding marine biologist and ichthyologist, had been its director until 1952, devoting much effort to developing numerous research fields, training students, and bolstering scientific educational activity in this beautiful corner of the Crimea.



The 1960s, the Karadag Biological Station laboratory building (left) and administrative building (right) with a library and first-aid post. Above at a distance stands the hydrometeorological station where its staff lived. Source: personal archive of N. Kustenko

Remembering K. Vinogradov, his son wrote that in the postwar years, Karadag was a prominent marine research center in the USSR. Many world-renowned scientists came here during that period: biochemist A. Palladin; biologists Academicians E. Pavlovsky, E. Kreps, L. Zenkevich, B. Bykhovsky, and G. Gauze; Corresponding Member of the Academy of Sciences of the Soviet Union P. Svetlov; Professors A. Lyubishchev and N. Gaevskaya; geologists Academicians D. Shcherbakov and Corresponding Member M. Muratov; astronomer Academician V. Fesenko, *etc.* Exchanging ideas with them was an excellent learning opportunity for Konstantin Vinogradov and other researchers at the Station. Scientific seminars and meetings were often held here, and tens of students, biologists, geographers, and geologists, as well as all manner of famous university teachers, visited the Karadag Biological Station every year [Vinogradov, 2009].

The Karadag old-timers recalled that the research community at the Station was a hotbed for innovation in the 1950–1960s. A powerhouse scientific collective had formed here and was studying marine and terrestrial ecosystems of the Crimea with great enthusiasm. The staff was regularly replenished with young specialists. This was the environment in which Lidiya Oven found herself in 1954. First as a junior researcher (1954–1959) and then as acting scientific secretary (1960–1963), she studied reproductive characteristics of Black Sea fishes, primarily their oogenesis and fertility.

In 1950, K. Vinogradov and K. Tkacheva had found and described multi-portion spawning in fish inhabiting the Black Sea [Vinogradov, Tkacheva, 1950], but it was L. Oven who studied in detail the multi-portion spawning and peculiarities of oogenesis of many Black Sea fishes. Many years later, she recalled her work at Karadag and her unexpected discovery: females of a small coastal fish, the red mullet, were able to spawn daily during the whole spawn season of 3 to 3.5 months a year. Such a long spawning period had not been previously identified for any Black Sea fishes; the generally accepted consensus was that most species spawned just once per season.

Discovery and further research into multi-portion spawning of Black Sea fishes allowed a reevaluation of their fecundity leading to a significant increase in their understood reproductive potential.

Karadag became more than the place for Lidiya Oven's first scientific discoveries. After moving there for work, she met a young employee of the hydrometeorological station in the village of Kurortnoye, Evgeny Oven. Soon after, they got married and lived a happy life together since. They were united by a love for the natural wonders of Karadag, the Crimea, and the Black Sea.

After successfully defending her thesis and receiving a PhD in biology from the Odessa State University in 1963, L. Oven began a new position at the A. O. Kovalevsky Institute of Biology of the Southern Seas in Sevastopol.

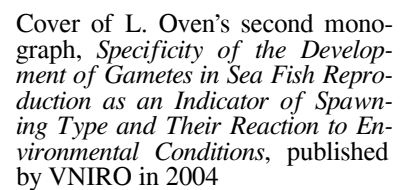
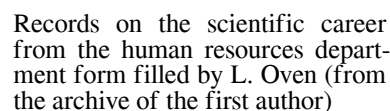
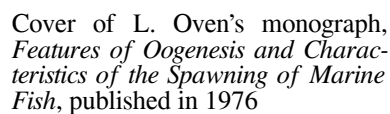
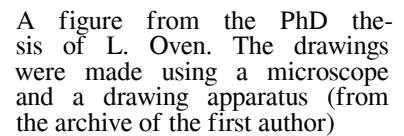
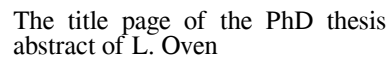
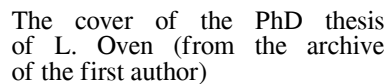
Since 1964, her entire career was connected with IBSS: here, she charted the path from a junior researcher to head of the department of ichthyology.

Lidiya Oven's main research interests included studies of reproductive biology of fish with a focus on gametogenesis, sexual maturation, formation of fecundity, and analysis of the effects of anthropogenic pollution of aquatic environments on these processes [70-letie, 2000].

Uncovering and studying of the process of multi-portion spawning in marine fish has changed the collective understanding about their reproductive potential. L. Oven showed that during a spawning season, oocytes of not only trophoplasmic but also protoplasmic growth can mature and be spawned; this significantly increases the overall seasonal fish fecundity.

She summarized the results of many years of research in the monograph *Features of Oogenesis and Characteristics of the Spawning of Marine Fish* [1976]. The book presents data on reproduction of members of 18 families of Black Sea fish and 7 families of tropical and subtropical fish from waters of the Atlantic, Indian, and Pacific oceans. Material for this work had been sampled from the Indian and Atlantic oceans, the Black, Mediterranean, and Red seas, and the Sea of Azov between 1955 and 1973. This collection of data was the result of comprehensive observation of maturation and spawning of 38 marine species with pelagic and demersal eggs under both experimental and natural conditions. While working on the monograph, Lidiya Oven prepared histological samples of ovaries and testicles of 1,500 specimens of 89 fish species. For studies of egg size distribution, 100 to 700 yolk oocytes were measured in each ovary.

L. Oven suggested the use of the following main attributes to characterize and study the reproduction of multi-portion spawning fish: size distribution of oocytes in the ovaries of mature females, the portion coefficient, the ratio of yolk oocytes of different size groups, and the change in the maturity coefficient of females during the spawning period. She also stressed the need for simultaneous biometrical analysis of ovarian eggs, histological analysis of the gonads, and separate counting of matured eggs and yolk oocytes by size groups.





Staff of IBSS ichthyology department. Left to right: G. Zuev, A. Tkach, T. Dekhnik, E. Kalinina, A. Gordina, and L. Oven [Lidiya Oven: put' nauki i prosveshcheniya, 2024]



Staff of IBSS ichthyology department. Left to right: A. Gordina, L. Salekhova, L. Oven, and N. Shevchenko [Lidiya Oven: put' nauki i prosveshcheniya, 2024]

It is also worth noting the modification of R. Mailyan's method for counting eggs in the ovaries of marine fish made by L. Oven in her research.

In 1978, Lidiya Oven successfully defended her D. Sc. thesis *Peculiarities of Gametogenesis and Spawning Strategies of Marine Fish* before the dissertation committee at the Institute of Evolutionary Morphology and Ecology of Animals (now, the Severtsov Institute of Ecology and Evolution Problems of the RAS).

She was never the type to hole up in her office shying away from fieldwork and getting dirt under her fingernails. In the course of her career, she participated in seven major scientific expeditions – to the Black, Red, and Mediterranean seas, as well as to the Atlantic and Pacific oceans – aboard the RVs “Akademik A. Kovalevsky” and “Professor Vodyanitsky.” Three times, she lead the research expeditions [70-letie, 2000].

For many years, L. Oven was a member of the IBSS scientific council. She served on the editorial boards of *Ecology of the Sea*, a scientific anthology issued by IBSS, and the *Journal of Ichthyology*, a renowned Russian journal.

During the 1990s, her studies focused on the effect of the anthropogenic transformation of the Black Sea ecosystem on the reproductive systems of fish. In fact, she laid the foundation for a new direction of research: bioindication of the state of the marine environment by analyzing the state of fish gonads.

Lidiya Oven published her second monograph through the VNIRO publishing house [2004]. In this book, she described reproduction characteristics of 17 families of fish with pelagic eggs and 8 families of fish with demersal eggs. Data presented in the monograph showed that portioned spawning is a characteristic shared by a substantial number of marine fish of temperate, tropical, and subtropical latitudes. In most marine polycyclic fish species, oocytes grow asynchronously during oogenesis developing according to one of two types – intermittent or continuous. Fish with intermittent type of oogenesis may have single spawning and two-, three-, or even multi-portion spawning. Fish with continuous oogenesis spawn in multiple portions.

She continued to conduct research and to mentor young scientists at IBSS even long after her well-deserved retirement.

Some personal reflections

Life had connected us with Lidiya Oven at the end of the 1980s and then scattered us to different cities and even countries, but we, her grad students, still keep very fond memories of our teacher.

Tatiana Bagnyukova, PhD

I entered the correspondence PhD program at IBSS in 1988 after graduating from the Odessa State University. The Karadag Biological Station, transformed by that time into the Karadag Natural Reserve, was my first workplace. Advised by L. Oven, I based my investigation of fish reproduction on her work conducted in the same region almost 40 years earlier. As a result, a comparative study came together demonstrating that the deterioration of reproductive characteristics of some Black Sea fish in the period from the late 1980s to the first half of the 1990s compared to the 1950s was well explained by anthropogenic pollution of coastal waters at the end of the 20th century.

I remember with great warmth my interactions with Lidiya Oven. I was struck by the lively sparkle in her eyes, the genuine interest in my work and in Karadag, where her own career had started. I remember with what delight she described her boat trips to sample ichthyoplankton and how insistently she advised me to work with live, unfixed samples for species identification in order to see the whole palette of colors and shades of eggs and larvae that are typically bleached by formalin. And indeed, the vibrant living world I saw under binocular microscope was amazing!

Histological slides of fish ovary I sampled at Karadag caused a kind of furor. I analyzed the fish species that were studied by L. Oven in the 1950s in detail: the red mullet, horse mackerel, European seabass, picarel, *etc.* Numerous photos of similar histological slides of the same species were included in her monograph published in 1976. Interestingly, the histology of fish ovaries collected in 1989–1991 was strikingly different from the “old” set of slides: the newer set showed signs of resorption of maturing oocytes up to their full destruction as well as other multiple pathologies of egg development. The situation near Karadag, as in all coastal water areas of the Black Sea, had changed with increasing pollution primarily affecting the most sensitive early stages of fish ontogenesis. This part of my study, performed with the direct supervision of Lidiya Oven, was the best part of my PhD thesis, according to many specialists.

I want to commend the incredible patience she had when working with my first attempts to write papers and then, my thesis. Few people can express their thoughts and describe results of their research at the beginning of their careers, and a mentor has the difficult task to teach their PhD student this as well. Lidiya Oven jokingly called the style of my first drafts, especially the early version of my thesis, “German.” I tried to put as much information as possible into one phrase; my texts were so full of compound and complex sentences that often there were not more than two or three sentences *per* printed page. She did much to improve my writing style.

L. Oven, even at the mature age when I met her, was a person with a young soul. She remains in my memory as a very gentle, kind person, who did not allow any harsh comments about other people. She was one of several people thanks to whom I did not leave research in the difficult 1990s. Although I have since changed my research field, I still feel the benefits of her mentorship and the strong foundation laid down when she guided my work.

About the author: T. Bagnyukova was a PhD student of Lidiya Oven in 1988–1992. She graduated from the Odessa State University in 1988 and was distributed to work at the Karadag Natural Reserve. She entered the correspondence PhD program at IBSS (Sevastopol) the same year.

In 1996, she defended PhD thesis *Dynamics of Reproductive Characteristics and Spawning Intensity of Mass Species of the Black Sea Fish near Karadag* (adviser, L. Oven). Then, she conducted research on glycolytic enzymes under different physiological conditions, as well as oxidative processes and antioxidant enzymes of fish and amphibians under stress factors. Later, she studied epigenetic mechanisms of development of some cancer types at the National Center for Toxicological Research (Jefferson, AR, USA). Since 2009, T. Bagnyukova has studied molecular mechanisms of drug resistance and novel approaches for cancer treatment at the Fox Chase Cancer Center (Philadelphia, USA).

Andrei Pashkov, PhD

In the 1970–1980s, graduates of the Kuban State University faculty of biology were often sent to work at IBSS in Sevastopol. Upon learning that I grew up in a seaside town, my university mentor Yu. Abaev contacted Lidiya Oven and recommended me for a summer student position in her lab.

I remember well my first meeting with her in her office. She had heard that I liked diving and said: “There are nice people working at our biological station in Batiliman. When they have scuba-dived, they found a lot of new things – for example, that the sea scorpions “run” on the sand at night. I think you belong there.”

For training, I was assigned to a junior research M. Kruglov. Both Lidiya Oven’s lab staff (V. Giragosov, T. Klimova, N. Shevchenko, and T. Chesalina) and specialists from other IBSS departments (A. Petrov and N. Revkov) provided assistance with my work.

Material collected under her supervision during that period became the basis for my diploma thesis, and later, expanded and supplemented during my PhD program, the basis of my dissertation *Ichthyofauna of the Black Sea Shelf in Polyhaline Waters*. L. Oven helped me to define the key direction of my research: the study of species composition and biological features of coastal Black Sea fish based on a combined method of sampling including net fishing and conduction of visual underwater observation.

As my PhD program was conducted via correspondence and there was no opportunity to make long-distance phone calls or use the Internet that time, Lidiya Oven and I communicated mainly using regular mail. After discussing with her main concerns and plans for sampling, material processing, and its analysis during my visits to Sevastopol two or three times *per* year, I would then return to the biological station of the Kuban State University (Betta farm) from where I corresponded with her by mail. For me, those letters were an invaluable source of ideas and a guiding example of a competent approach to the organization of research.

For Lidiya Oven, I had always been just Andrei whether I was in my 20s, 30s, or 50s – no matter if I was a student, teacher, or researcher. Since our first meeting and to our last phone conversation, she has addressed me with the formal “you.”¹ An *a priori* respectful attitude towards colleagues, including her subordinates and scientific opponents, was one of her striking characteristics. I never heard her raise her voice at anyone.

L. Oven was very sensitive to the presentation of research results. I still remember the stern talking she gave to me after finding some typos in my diploma thesis which I had proudly presented to her before entering the PhD program.

¹There are two forms of “you” in Russian: a singular, informal “you” and a singular formal and plural “you.” As a show of respect, people use the formal “you.”

Even after retiring, she remained actively interested in my work, remembered the birthdays of my family members, and never forgot to send me holiday well wishes.

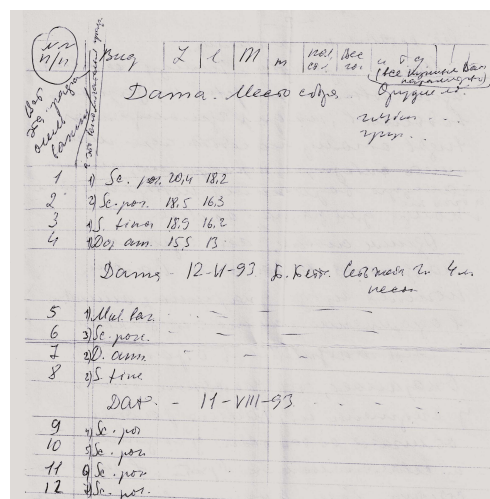
Lidiya Oven's support helped not to leave research in the 1990s and guided me in my life after that.

About the author: A. Pashkov was a PhD student of L. Oven in 1992–1996. He attended the Kuban State University in 1987–1992. In 1990–1992, he completed the summer program at IBSS (Sevastopol). After graduation in 1992, he started working at the Betta Biological Station of the Kuban State University; at the same time, he entered the correspondence PhD program at IBSS. In 1993–2001, he headed the Betta Biological Station, and after defending his PhD thesis in biology at “VNIRO,” he worked as teacher, senior teacher, associate professor, and head of department at the Kuban State University. In 2016–2019, he was the deputy head of the Krasnodar Branch of the Azov Research Institute of Fisheries. Since 2019, he has been the leading researcher of the Krasnodar Department of the Azov–Black Sea branch of the “VNIRO” (“AzNIIRKh”).

The text of this paper has been approved by Lidiya Oven's daughter, Mariya Rubakhina.

The authors express their deep gratitude to Professor Irina Rudneva, D. Sc., for her help in preparing materials for the paper.

The main publications of Lidiya Oven are available in the IBSS open access repository (<https://repository.marine-research.ru/>).



Fragment of a letter from L. Oven to the second author (1993)

REFERENCES

1. 70-letie doktora biologicheskikh nauk Oven Lidii Sergeevny. *Ekologiya morya*, 2000, vol. 51, pp. 103–104. (in Russ.). <https://repository.marine-research.ru/handle/299011/4312>
2. Vinogradov A. K. *Morskoi biolog Konstantin Aleksandrovich Vinogradov*. Sevastopol : EKOSI-Gidrofizika, 2009, 105 p. (in Russ.). <https://repository.marine-research.ru/handle/299011/9339>
3. Vinogradov K. A., Tkacheva K. S. Materialy po plodovitosti ryb Chernogo morya. *Trudy Karadagskoi biologicheskoi stantsii*, 1950, iss. 9, pp. 3–63. (in Russ.). <https://repository.marine-research.ru/handle/299011/6713>
4. Lidiya Oven: put' nauki i prosveshcheniya. (in Russ.). URL: <https://vk.com/@ibssras-lidiya-oven-put-nauki-i-prosveshcheniya> [accessed: 10.08.2024].
5. Oven L. S. *Osobennosti oogeneza i kharakter neresta morskikh ryb* / AN USSR ; Institut biologii yuzhnykh morei imeni A. O. Kovalevskogo. Kyiv : Naukova dumka, 1976, 132 p. (in Russ.). <https://repository.marine-research.ru/handle/299011/1767>
6. Oven L. S. *Spetsifika razvitiya polovykh kletok morskikh ryb v period razmnozheniya kak pokazatel' tipa neresta i reaktsii na usloviya sredy obitaniya*. Moscow : Izd-vo VNIRO, 2004, 188 p. (in Russ.). <https://repository.marine-research.ru/handle/299011/11942>
7. To the memory of Lidiya Oven (06.05.1930 – 09.01.2021). *Morskoy biologicheskij zhurnal*, 2021, vol. 6, no. 1, pp. 117–118. (in Russ.). <https://elibrary.ru/kfxegq>

**В ПАМЯТЬ О ЗАМЕЧАТЕЛЬНОМ ЧЕЛОВЕКЕ И ИХТИОЛОГЕ —
ЛИДИИ СЕРГЕЕВНЕ ОВЕН**

Т. В. Багнюкова¹, А. Н. Пашков²

¹Онкологический центр Фокс Чейз, Филадельфия, Пенсильвания, США

²Азово-Черноморский филиал ФГБНУ «ВНИРО» («АзНИИРХ»),

Ростов-на-Дону, Российская Федерация

E-mail: pashkovan@azniirkh.vniro.ru

В январе 2021 г. ушла из жизни Лидия Сергеевна Овен — замечательный человек и блестящий ихтиолог. Она внесла весомый вклад в ихтиологию, особенно в изучение репродуктивной биологии рыб, фактически заложив и развив методологические основы исследования особенностей оогенеза и характера размножения порционно нерестующих морских рыб. Не менее важными нам кажутся её человеческие, личностные качества. Мы, бывшие аспиранты Лидии Сергеевны, хотим почтить её память этим неформальным некрологом. Мы оба обучались в аспирантуре в сложное время — в первой половине 1990-х гг., когда само по себе решение стать учёным было нетривиальным. Вклад Л. С. Овен в формирование нас как учёных неоценим: она руководила нашими первыми шагами в науке и учила самостоятельно анализировать исследуемые биологические процессы. Данной публикацией мы хотим напомнить новым поколениям молодых биологов об этом прекрасном человеке.