

## **History of Laboratory of Geomorphology and Ocean Floor Tectonics of Geological Institute, Russian Academy of Sciences**

(The historical aspects of Laboratory are described from domestic viewpoint and could not reflect wide spectrum of opinions of other researchers, who ever have cooperated with Laboratory activities. In progress of this Page further development, some corrections or additions are available).

The Geological Institute always paid attention to study of different aspects of tectonics, lithology and stratigraphy of World ocean and transitive zones. Still in 40 - 70 years were published detailed works on tectonics of the seas and oceans by A.D. Arkhangelsky, M.V.Muratov, N.S.Shatsky, P.N. Kropotkin, A.V. Peyve, Yu.M. Puscharovsky and etc. The studies in area of lithology by Strakhov N.M., Timofeev P.P., Khvorova I.V. and etc., are well known in Russia and abroad. Moreover, the general management of researches on problems of World ocean, that was carried out, in particular, by Yu.M. Puscharovsky, always took into account the importance of this field of knowledge from Earth sciences in common stream of science development.

Till 1956 in Institute there was a Sea geological group, supervised by M.V.Klenova, which carried out researches of sedimentary cover in the Caspian, Black and Azov seas. The subjects of works was closely connected to problems petroleum potential. In structure of this group have been working Soloviev V.F., Rikhter V.G., Skornyakova N.S., Kulakova N.R., Lavrov V.M., Barash M.S., Aleksina I.A., Vikhrenko N.M., Savelyeva K.P., Agapova G.V.. By results of their studies the first Atlas of the Caspian sea sediments and series facial maps was created. In Institute there was no research vessel, that, probably, and has become the main reason for transition of group to Shirshov Institute of Oceanology (SIO AN), in which its basic part has continued researches in Atlantic and other oceans and seas.

In described time in SIO AN for a long time had already existed the department of sea geology headed by P.L. Bezrukov, which structure has included the employees of Geological Institute sea group. The department promptly developed in process of growing interest to researches of World ocean in various aspects. In particular, since 1949 there was a group of cartography in department headed by G.B.Udintsev, which partially included employee updating from Geological Institute. This group also developed by fast rates, and the basic direction of development was creation of a complex of various research methods for application to the main object of group - World ocean bottom. It achieved the rather important result - multilateral complex scope of problems of ocean floor structure and, as a consequence, its more complete analysis. The new employees of group from Geological Institute (and not only) should adapt for the existing tendency of development, in which, by the way, the special importance was given to geophysical methods of researches.

By the end of the 50-th years the group was developed in a Cabinet, and steel to be planned the tendencies to a stratification inside group depending on specialization. Besides this, the accent on geophysical methods was in a strong degree stimulated by approaching of the International Geophysical Year (1958) and its consequences (for development of science). The further development of a Cabinet resulted in formation in

the beginning of the 60-th years of Sector for ocean floor geophysics of SIO AN, headed by G.B.Udintsev, with numerous internal divisions on oceanographical and geophysical specializations (including cartography and geomorphology). In this structural kind Sector has been existing for long time, marked by numerous expeditions and discoverings in the field of fundamental and applied researches of World ocean floor.

The Geological Institute supported all this time close scientific contacts with SIO AN and in the beginning of the 70-th years the joint 49-th leg of R/V «Vityaz» in Pacific ocean was held, after which the employees of Geological Institute participated practically in all legs of R/V « Dmitrii Mendeleev », « Akademik Kurchatov» and etc.

In the meantime, in 1976 Sector for ocean floor geophysics of SIO AN staff members for technical reasons have separated into approximately two equal parts, one of which, headed by G.B.Udintsev, has passed in Institute of physics of Earth AN USSR, where on its base under the initiative of V.V.Belousov two friendly Laboratories were created: laboratory of geomorphology (G.B.Udintsev) and laboratory of marine seismoacoustics (A.F.Beresnev). The existence of these Laboratories under aegis of Institute of physics of Earth, which had not the vessel, nevertheless was accompanied by sea forwarding studies, and, that is more important, enrichment of experience of Laboratories by the traditional physical and global approach to the decision of applied geophysical problems on research of ocean floor structure.

In the beginning of the 80-th years in Geological Institute experience of participation in marine works together with SIO AN and analysis of the tendencies of global tectonic ideas development brought the Institute headquarters, led by A.V.Peyve, to understanding of expediency of a research vessel purchase. Thus, from middle of the 80-th years was determined new research direction to many (but not for all) employees of Geological Institute - tectonic research at oceans. The employees of laboratories (at this time some more included in structure of Institute of physics of Earth) officially take part in designing the specialized geological-geophysical vessel for Geological Institute and Institute of geochemistry and analytical chemistry. After huge organizational work of many employees of Institute and, first of all, Yu.M.Puscharovsky, the Geological Institute has become the shipowner of R/V "Akademik Nikolaj Strakhov", in which first legs, alongside with the own experts, the experts from Institute of physics of Earth (laboratories of G.B.Udintsev and A.F.Beresnev) participated.

And here, in 1986 for more high-grade maintenance of geomorphologic and geophysical researches of ocean on basis of R/V "Akademik Nikolaj Strakhov" the group of the experts headed by G.B.Udintsev and A.F.Beresnev, consisting approximately from 20 employees, was invited in Geological Institute, having by then the status of two Laboratories in Institute of physics of Earth. In passed group of employees there were experts in floor geomorphology, sea cartography, continuous seismic profiling, magnetometry, mathematical data processing, dredging and processing of rock material, and also sea engineers. The status of this scientific group as two independent laboratories any time was kept in Geological Institute, but then laboratories were incorporated in one. In other words, scientific group having wide experience of sea works realization, data processing (including computer based) and revealing of scientific (fundamental and applied) results on sea subjects has joined Geological Institute. On the part of Geological Institute this step was rather expedient, as the formation of similar groups is long process

and can not take place suddenly from zero. Since 1989 Laboratory of geomorphology and ocean floor tectonics (so has become now to refer the group passed in Geological Institute) is supervised by A.O.Mazarovich.

In 1992 a part of Laboratory (the approximately half) led by G.B.Udintsev, for technical reasons has passed in V.I.Vernadsky Institute of geochemistry and analytical chemistry, where also there was a necessity for maintenance of geomorphologic and geophysical researches of ocean, but already on board of R/V "Academik Boris Petrov", belonging to Institute of geochemistry, where continues successfully to work now.

The part of Laboratory staff members, who has stayed in Geological Institute and has made (thus and somewhat) a closed circle, having long-term experience of sea works, and enriched (in addition to experience acquired in Institute of physics of Earth) this time already by experience of traditional tectonic approach, is continuing its traditional job: solving of applied geophysical problems on research of ocean floor structure, simultaneously reflecting the achieved results on the given Web Pages in Internet.