

republic. The institute has also achieved substantial successes in the study of helminthiases and the organization of measures to combat them.

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Title: DEEP-LEVEL STUDIES OF ELEMENTARY PARTICLES IN LAKE BAYKAL

Primary source: Pravda, March 5, 1982, No. 64 (23225), p. 2, cols. 6-8

Extract: A new contingent of scientists has begun work in the southwest part of Lake Baykal. Associates of the Limnology Institute and the Siberian Institute of Earth Magnetism, the ionosphere and propagation of radio waves are drilling through the thick ice of the lake. Their task is to study properties of the ice and features of processes taking place in the water under its solid surface.

"The decision has been made to create a station near Marituy Settlement, east of Cape Stolba, for detecting and recording elementary particles -- muons and neutrinos -- at deep levels of the water," reported G. Galaziy, a corresponding member of the USSR Academy of Sciences and director of the Limnology Institute. "This work will be pursued in accordance with the Dumande international program, with specialists of a number of countries participating. The contingent of limnologists and physicists is also studying the strength of the ice, for the purpose of issuing recommendations regarding the installation and transporting of apparatus in the winter."

The strength of rays of the sun penetrating the ice layer also requires careful evaluation. The water is heated by two degrees under pure ice one meter thick, which transmits solar radiation well. As a result, photosynthesis of algae takes place and fish eggs develop, which reduces the transparency of the water. It was thought up until recently that the ice impeded heat radiation emitted by the bottom of

Lake Baykal. It was presumed that a kind of greenhouse effect occurs and the uppermost layer of the water is heated.

"Our experiments have not confirmed the existence of this phenomenon," said Candidate of Physical-Mathematical Sciences P. Sherstyankin, the head of the contingent. "It has been established that cracked ice 'functions' as a prism, a trap for rays of the sun. Rays penetrating the water can emerge in the opposite direction only at a strictly determined angle. A light field is thus created under the ice."

"The detection of muons and of flows of neutrinos coming from the sun and stars is of great significance. These perpetual wanderers and envoys from outer space help to interpret the structure of space, as well as processes taking place in the universe. Knowledge of these processes is also of practical interest."

"Take, for example, muons -- elementary particles which originate in the interaction of cosmic rays with the matter of the earth's atmosphere. These rays are capable of penetrating our planet to a depth of kilometers, probing the upper layers of the earth's crust by radiation. With the aid of muons, one can pursue geophysical prospecting of minerals, check the correctness of the drilling of tunnels through rock, and determine more precisely the boundaries of ore bodies and of water supplies in the snow cover of almost inaccessible mountain regions from which avalanches and mudslides descend."

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Title: INEFFICIENCIES IN MACHINE BUILDING'S PLANNING AND ACCOUNTING

Primary source: Ekonomicheskaya gazeta, March, 1982, No. 10, p. 6, cols. 4-5

Extract: The bureau of an inter-agency commission of the USSR State Planning Committee (Gosplan) has reviewed the question of improving planning indicators and evaluation of the work of machine building enterprises. It was noted that a number of departments of USSR Gosplan