

UDINTSEV, G.B.

New data on the topography of the Kurile -- Kamchatka depression.  
Dokl.AN SSSR 94 no.2:315-318 Ja '54. (MLRA 7:1)

1. Institut okeanologii Akademii nauk SSSR.  
(Kurile Islands--Geology) (Kamchatka--Geology)

UDINTSEV, G.B.

LISITSYN, A.P.; UDINTSEV, G.B.

New model of a bottom dredger bucket. Trudy Gidrobiol.ob-va  
no.6:217-222 '55. (MIRA 8:9)

1. Institut okeanologii Akademii nauk SSSR  
(Dredging (Biology))

UDINTSEV, G.B.

Topography of the Kurile-Kamchatka Trench. Trudy Inst. okean.  
no.12:16-61 '55. (MLRA 8:9)

(Kurile Trench--Submarine topography)

UDINTSEV, G.B.

Origin of the Sea of Okhotsk submarine topography. Trudy Inst.  
okean. no.13:5-15 '55. (MLRA 8:11)  
(Okhotsk, Sea of--Submarine topography)

UDINTSEV, G. B.

How mecho depth sounder operates. Geog. v shkole 18  
no.3:55-57 My-Je '55. (MIRA 8:9)  
(Sounding and soundings)

UDINTSEV, G.B.

Geological structure of the Kurile-Kamchatka Trench. Priroda 44  
no.12:79-82 D '55. (MLRA 9:1)

1. Institut okeanologii Akademii nauk SSSR.  
(Kurile Trench--Geology, Structural)

Udintsev, G.B.

BEZRUKOV, P.L.; UDINTSEV, G.B.

The northern end of the Hawaiian submarine ridge. Dokl. AN SSSR  
103 no.6:1077-1080 Ag '55. (MLRA 9:1)

1. Institut okeanologii Akademii nauk SSSR. Predstavleno akademi-  
kom D.I. Shcherbakovym.  
(Hawaiian Islands--Geology)

UDINTSEV, G.B.

Relief of the Kurile-Kamchatka Trench. *Biul.Sov. po seism.*  
no.2:35-42 '56. (Kurile Trench) (MLRA 9:9)



UDINTSEV, G. B.

15-57-4-5284

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 4,  
p 171 (USSR)

AUTHORS: Sysoyev, N. N., Mikhal'tsev, I. Ye., Udintsev, G. B.,  
Lisitsyn, A. P.

TITLE: The Potentialities of Studying the Thickness of Uncon-  
solidated Marine Sediments by Seismo-Acoustical Methods  
(Perspektivy izucheniya moshchnosti rykhlykh morskikh  
otlozheniy seysmoakusticheskimi metodami)

PERIODICAL: Buyl. Soveta po seysmol. AN SSSR, 1956, Nr 2, pp 52-58.

ABSTRACT: The authors examine the potentialities of seismo-  
acoustical investigations of the floor of the seas and  
oceans. The apparatus for these studies (EKhO-52),  
which permits the use of either reflected or refracted  
waves, was designed and built at the Institute of  
Oceanology (Oceanography and all related and pertinent  
sciences) of the Academy of Sciences of the USSR in  
consultation and cooperation with the Acoustical  
Institute. The apparatus includes a detector with a

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15-57-4-5284

The Potentialities of Studying the Thickness (Cont.)

sensitive element of Rochelle salt, a specially constructed amplifier, and also an 8-loop oscillograph MPO-2 and an electronic oscillograph EO-4 with a photographic recorder. The apparatus was tested in the eastern part of the Black Sea and produced satisfactory results. Reflections were obtained from four horizons at depths of 180 m, 330 m, 470 m, and 570 m. The question is raised as to the possibility of forming tsunamis during underwater landslides.

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L. L. V.

~~UDINTSEV, G.B.~~

Interpreting fathograms. Trudy Inst.ocean. 19:169-194  
'56.

(MLRA 10:2)

(Echo sounding)

~~UDINTSEV, G.B.~~

Collation of sounding lines. Trudy Inst.ocean. 19:195-203  
'56.

(MLRA 10:2)

(Deep-sea sounding)

UDINTSEV, G.B.; LISITSYN, A.P.; KANAYEV, V.F.; ZENKIVICH, N.L.;  
GAI PANTSEROV, F.I.

Design of a piston core sampler with an automatically  
stabilized piston. Trudy Inst.okean. 19:232-237 '56.

(MLRA 10:2)

(Boring machinery)

UDINTSEV, G.B.; LISITSYN, A.P.; KANAYEV, V.F.; ZENKEVICH, N.L.; GANPANTSEV,  
F.I.

Piston tube with rigid frame for obtaining high quality samples  
of marine deposits, Zemlevedenie 4:263-266 '57. (MLRA 10:9)  
(Deep sea deposits)  
(Scientific apparatus and instruments)

UDINTSEV, G. B.

"Relief of Sea of Okhotsk", Reports of the Inst. of Oceanography, Academy of Sciences USSR, Vol. 22, 1957, p.1-76.

This article includes soundings from Soviet oceanographic research ship VITYAZ. (Part of IGY program)

SOV/124-58-11-12211

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 11, p 35 (USSR)

AUTHOR: Udintsev, G. B.

TITLE: ~~On Speed-of~~ sound Corrections to be Applied to Ocean-depth Readings  
Obtained by an Echo Depth Sounder (O popravkakh na skorost' zvuka  
k glubinam, izmerennym ekholotom)

PERIODICAL: Tr. In-ta okeanol. AN SSSR. 1957, Vol 25, pp 115-117

ABSTRACT: Bibliographic entry

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UDINTSEV G.B.

20-5-19, '67

AUTHOR

SERGEYEV I.V., UDINTSEV G.B.

TITLE

Discovery And Exploration of the submarine Isakov Mountain in the Pacific.

PERIODICAL

(Otkrytiye i issledovaniya podvodnoy gory Isakova v Tikhom Okeane-Russian) Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 5, pp 1123-1126 (U.S.S.R.)  
Received 7/1957 Reviewed 8/1957

ABSTRACT

The frequent occurrence of submarine mountains is one of the specialities of the ground-relief of the Pacific. Most of them have an almost conical shape, sometimes with a cut off peak. They reach a height of some hundred up to 4-5000 m. In recent years a number of such mountains which are distributed over the whole ocean were discovered, they are, however, combined with chiefly not very high vault-elevations. According to the general opinion of the geologists their origin is volcanic. The ground-relief of the north-western part of the Pacific was not explored to such an extent as elsewhere. The submarine mountains were first discovered only in the northern continuation of the Hawaiian submarine chain and in the western part of the Pacific middle dike. Thus submarine mountains were not known for greater territories in the north of the middle dike. A row of single mountains was discovered in 1953 on the occasion of the 14. voyage of the "Vityaz'" in the south-east of the Kuriles-Kamchatka-depression. They were all only some hundred meters high. On October 19th, 1954 investigations were carried out east of the Idzu-islands during the 19th voyage of the same ship. It was noticed that the Ganges-islands which can be found in many charts in reality do not exist, nor were any submarine mountains which re-

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Discovery And Exploration of the Submarine Isakov Mountain  
in the Pacific.

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cently might have projected beyond the water as islands found. Simultaneously an enormous submarine mountain with a height of 5000 m on the ground of the ocean was discovered about 280 km west of this place; its peak is 1400 m below the surface, whereas the surrounding bottom of the sea is 6400 m deep. On September the 27th the mountain was thoroughly investigated on the occasion of the 22nd voyage of the "Vityaz", and samples of the bottom were taken. Astronomic position-findings were carried out carefully. The mountain has an oval shape, with a great axis in the transversal and a small one in the meridional direction. Its breadth at the isobath 5000m amounts to 28-35 km. The middle part is almost horizontal. This mountain is one of the largest that have been discovered in the last years in the Pacific, as big as Fudzni-Yama or the Klyuchevskaya Sotka of Kamchatka, furthermore as big as the biggest submarine mountains of the Pacific: Erben- and Fliberling-mountain. The discovery of the Isakov Mountain allows the statement that volcanic phenomena are combined not only with big vault-elevations but also with the areas of the flat depressions between them.  
(With 2 illustrations, 2 Slavic references).

ASSOCIATION Institute for Oceanology of the Academy of Science of the U.S.S.R.  
PRESENTED BY STRAKHOV N.M., Member of the Academy  
SUBMITTED 24.8.1956  
AVAILABLE Library of Congress  
Card 2/2

G. DINTSEV, G. B.

20-6-15/48

AUTHORS: Lisitsyn, A.P., Mikhal'tsev, I.Ye., Sysoyev, N.H., Udintsev, G.B.

TITLE: New Data on the Thickness and on the Sedimentary Conditions of Soft Deposits in the Northwestern Part of the Pacific (Novyye dannyye o moshchnosti i usloviyakh zaleganiya rykhlykh otlozheniy severo-zapadnoy chasti Tikhogo Okeana)

ASSOCIATION: INST. OCEANOLOGY, AS USSR

PERIODICAL: Doklady AN SSSR, 1957, Vol. 115, Nr 6, pp. 1107 - 1110 (USSR)

ABSTRACT: At present the Institute for Oceanology, AN USSR, investigates the thickness of the slack deposits on the bottom of the seas and oceans by seismic-acoustical methods. It is referred to former expeditions on board of the ship "Vityaz". In these investigations detonations of explosive charges of 400 g up to 120 kg served as sources of the elastical oscillations. These charges exploded according to the operational method either at the surface of the water or in a depth of 1 m or in depths between 50 and 70 m. The reflected waves were registered immediately at the point of the explosion or in different distances from it. The receivers were let down into depths of 30 to 150 m. The recorded signals were amplified and registered by a magneto-

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20-6-15/48

New Data on the Thickness and on the Sedimentary Conditions of Soft Deposits  
in the Northwestern Part of the Pacific

electrical oscillograph. The present paper investigates the data obtained from the registration of the reflected waves immediately at the point of the explosion. The evaluation of these data gives evidence of the existence of several interfaces in the soft layer of deposits and these parting surfaces lie in different depths below the bottom of the sea. Southeast of the middle part of the Kuriles in all measuring points 2 to 3 reflecting layers were ascertained and the depth of these layers under the bottom of the sea is different in every point. One of these parting layers reflects the waves twice as much as the bottom of the sea. This parting interface was ascertained in a very far distance from the Haway underwater-ridge to the height of Zenkevich. Then the behavior of these layers east of the Japanese island Honshu (Khonsyn) and in the Philippines ditch is discussed. The results of these investigations obtained so far are not plenteous and their interpretation is not concluded yet. Nevertheless the following can already be said: These results are in good conformity with the results obtained by sonic altimeter and the accumulation of the deposits in the northwestern basin of the Pacific takes place irregularly. There are 1 figure, 2 tables and 2 references, 1 of which is Slavic.

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UDINTSEV, G. B.

20-5-34/48

**AUTHORS:** Bezrukov, P. L. , Boychenko, I. G. , Zhivago, A. V. , Zenkerich,  
N. L. , Kanayev, V. F. and Udintsev, G. B.

**TITLE:** New Data on the Rules Governing the Morphology of Submarine Relief  
(Novyye dannyye o zakonomernostyakh stroyeniya podvodnogo relyefa)

**PERIODICAL:** Doklady AN SSSR, 1957, Vol. 116, Nr 5, pp. 841 - 844 (USSR)

**ABSTRACT:** The cooperation of the two institutes given under "association" facilitated the obtaining of the characteristic of some outlines of the morphology of the submarine relief, together with the results of foreign expeditions. These outlines were formerly either not to a great extent known or subestimated. Conceptions of the borders of greatest morphological areas or of the forms of first order like the submarine margins of the continents, the zone of the continental slope, and of the ocean gulf ("lozhe okeana") could be defined exactly; furthermore the rules governing the order of the great relief forms (forms of second order), as well as the character of the connections in the order of smaller forms could be explained. In the coastal zone and in the shallow water zone the bottom of the sea is nearly everywhere levelled and slopes towards the sea extremely softly. This bottom area is bordered by a bend of the bottom, towards the sea. Behind it the bottom changes into a

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New Data on the Rules Governing the Morphology of Submarine Relief

more articulated area. This threshold does not lie deeper than 300 m, on an average of 130 m. The levelled area is towards the sea replaced by either the area of the submarine margin of the continent or by the zone of the continental slope. The latter has considerable inclinations as well as a very complicated relief. The origin of the levelled area of the bottom in shallow water is to be assumed to be in connection with the abrasion-accumulative levelling processes. The surfaces of the submarine margins of the continents often cover large areas in comparatively shallow places of the ocean. As a rule they continue the coastal plains of the continent. Their breadth and depth vary in vast borders; single sections lie in a depth of from 1000 to 1500 m. Up to now the technical terms: continental abyss and continental shelf were not used precisely enough. The expression continental slope does not reflect precisely the fundamental traits of the transition zone from the continental area to the ocean "sprout" ("lozhe okeanov"). It would be more precise to call it "zone of the continental slope". Examples for a very complicated and a more simple structure are given. The upper margin of the zone of the continental slope corresponds either to the exterior margin of the levelled area of the coast-near shallow water or to the exterior margin of the submarine marginal zone of the continent. Sometimes there are also compara-

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tively steep steps. In such cases one can speak of a taking part of the continental marginal zone in the development of the zone of the continental slope. The lower margin of the zone of the continental slope is rather clearly characterized by a bend of the bottom area in the transition to the ocean sprout or by a still sharper bend in the transition to the flat bottom area of the oceanic deep sea channels which in many regions are bound to the lower part of the continental slope. The ocean sprout is characterized by a great variety of forms and relief types: elevations, mountain ridges, and single mountains occur frequently. The great relief forms (of second order) are distributed in all parts of the oceanic bottom. It is difficult to observe the continuations of the great relief forms of the continent in the levelled part of the coast, they are, however, better marked in the zone of the continental slope. In several cases a connection between the relief forms of the zone of the continental slope and those of the ocean sprout becomes visible. Towards the land they are only seldom continued on the continental margin. The great variety of the small ground relief forms can be comprised in 3 groups: 1.) a relief in which the traits of the original relief are long time conserved which is covered by a

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New Data on the Rules Governing the Morphology of Submarine Relief

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sedimentary cover of the same thickness. 2.) the levelling relief the original unevenness of which is filled in ; the thickness of the sediments increases here in the depressions, and 3.) a levelled relief in which the sediments cover all unevenness of the original relief; in the depressions the layers are much thicker and broken at the elevations. There are 7 references, 4 of which are Slavic.

ASSOCIATION: Institute for Oceanology, Institute for Geography AN USSR  
(Institut okeanologii, Institut geografii Akademii nauk SSSR)

PRESENTED: May 13, 1957, by I. P. Gerasimov, Academician

SUBMITTED: June 11, 1957

AVAILABLE: Library of Congress

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UPINTSEV, G. B.

"Objectives and Principles in Exploring the Seafloor Contours of Far Eastern Seas and the Northwestern Part of the Pacific." The article recapitulates the main contributions made to this problem by various Soviet and foreign organization. The article mentions the State Hydrological Institute (GGI) and the Pacific Inst. of Piscatology (TIRKh). It points out the existence of an edition of Hypsometric Maps (1949) of the USSR. In contradistinction to former attempts, the author emphasizes the necessity for further study of the geological history of the bottom and its geological structure, especially that of the Kurile archipelago. The article summarizes the recent results on this subject, obtained by the Complex Oceanographic Expedition of 1949-54.

Oceanographic Research of the Northwestern Part of the Pacific Ocean Moscow, Izd-vo AN SSSR, 1958, 148 pp. Its: Trudy, t.2.

This collection of articles reports the results of observations made in Pacific, by the Institute of Oceanology of the Academy of Sciences, USSR. In 1949, the Inst launched a systematic five-year program of scientific exploration of certain hydrographical peculiarities of the Soviet Pacific Area. The operations were carried out as a "Complex Oceanographic Expedition," using the Motorboat Vityaz' as its base. The expedition worked in collaboration with the Hydrographic Institute of the Soviet Navy (VMS), the Pacific Institute of Piscatology and Oceanography, and some 40 other institutes of the Acad. of Sci. Between 1949 and 1954, 18 trips were made, covering about 130,000 miles. Among the subjects of direct concern were:

meteorology, hydrology, oceanography, hydrochemistry, sedimentation, geography of the littoral, geology and contours of the sea bottom, fauna, plankton, microbiology, and gravimetry. Twenty-eight authors contributed to the collection which consists of 27 articles. There are: 6 tables, 23 diagrams, 3 illustrations, (Photographs of the littoral), 4 maps. There are no references.

UDINTSEV, G.B.; LISITSYN, A.N.; NEPROCHNOV, Yu.P.

Equipment and methods used in determining the thickness of  
unconsolidated marine deposits and studying the bottom structure  
of seas and oceans. *Biul.Okean.kom.* no.2:41-46 '58.

(MIRA 12:5)

(Deep-sea deposits)

UDINTSEV, G.B.

Equipment and methods for bottom relief study in oceanographic  
research. *Biul.Okean.kom.* no.2:24-33 '58. (MIRA 12:5)  
(Submarine topography)

SOV-26-58-3-12/51

**AUTHORS:** Birshteyn, Ya.A., Professor; Savilov, A.I., Candidate of Biological Sciences; Udintsev, G.B., Candidate of Geographical Sciences

**TITLE:** Trawling at the Maximum Depth of the World Ocean (Traleniye na maksimal'noy glubine mirovogo okeana)

**PERIODICAL:** Priroda, 1958, Nr 3, pp 70-71 (USSR)

**ABSTRACT:** The "Vityaz'" expeditionary vessel of the Institut okeanologii AN SSSR (Institute of Oceanology of the AS USSR) did some IGY research of the Marianas Trench on its first cruise. The results obtained showed that the trench has a flat bottom, 1 to 3 km wide, at a depth ranging between 10,000 and 10,900 m between 141°51' and 142°15' west longitude. Maximum depth in this region is 10,960 m. It was found out that the level bottom of the trench becomes bipartite in a westward direction, owing to a small extended upheaval. Research on the "Vityaz'" included trawling for fauna in the deepest part of the trench. On a former trawling expedition in 1953, fauna had been obtained from a depth of 9,950 m in the Kuril-Kamchatka trench. The apparent absence of fauna on the trench bottom is explained by either an extreme rarity of specimens, a total absence in

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Trawling at the Maximum Depth of the World Ocean

SOV-26-58-3-12/51

this particular area, or an absence due to life-suffocating masses of all kinds of organic sediments or intermittent volcanic action in this region. There are 4 references, 2 of which are Soviet and 2 English.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova (Moscow State University imeni M.V. Lomonosov) and Institut okeanologii AN SSSR-Moskva (Institute of Oceanology of the AS USSR-Moscow)

1. Aquatic animals--Pacific Ocean
2. Ocean bottom--Geology
3. Ocean bottom--Sampling

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AUTHOR:

Udintsev, G.B.

SOV/5-58-4-26/43

TITLE:

The Geological Results of the Expedition of the "Vityaz'"  
to the ~~Western~~ Part of the Pacific (Geologicheskiye rezul'-  
taty ekspeditsii "Vityazya" v zapadnoy chasti Tikhogo okeana)

PERIODICAL:

Byulleten' Moskovskogo obshchestva ispytateley prirody,  
Otdel geologicheskoy, 1958, Nr 4, pp 152-153 (USSR)

ABSTRACT:

This is a summary of a report given by the author at a conference of the Moscow Society of Naturalists on 13 May 1958. In 1957 and 1958, an expedition of the Institut okeanologii AN SSSR (Institute of Oceanography of the AS USSR) on the "Vityaz" carried out geological research in the western Pacific within the program of the International Geophysical Year. This expedition studied the sub-water relief, collected samples of bottom sediments and rocks, atmospheric and water suspensions, investigated the loose deposits by seismic and acoustic methods and made photographs of the ocean.

1. Geology
2. Hydrology
3. Seismographs--Applications
4. Photography

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26-58-7-18/48

AUTHOR: Udintsev, G.B., Candidate of Geographical Sciences

TITLE: The Discovery of an Abyssal Trench in the Western Part of the Pacific (Otkrytiye glubokovnogo zheloba v zapadnoy chasti Tikhogo okeana)

PERIODICAL: Priroda, 1958, Nr 7, pp 85-88 (USSR)

ABSTRACT: "Vityaz'", the research vessel of the Institute of Oceanology of the AS USSR is conducting complex oceanographical investigations in the Pacific within the setup of the IGY. Special attention is devoted to the ocean bottom relief and trenches. In 1957 the "Vityaz'" found that the correct depth of the Tonga and Marianas depressions were 10,841 and 10,990 m respectively. On 3 February 1958, the vessel sailed northward along the meridian of 170°16' west longitude. In the region of 10°25' south latitude reflection soundings indicated a V-shaped trench with steep slopes and a nearly horizontal level bottom of about 4 miles width. Bottom depth was established at 6,140 m. This depth, by no means uncommon in the Pacific, is outstanding in this region, where the average depth is 3,500 to 4,500 m with two exceptional marks of about 5,668 m. There is 1 chart and 1 graph.

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*INST. OCEANOLOGY AS USSR Moscow*



BEZRUKOV, P.L.; ZENKEVICH, N.L.; KANAYEV, V.F.; UDINTSEV, G.B.

Submarine mountains of the Kurille Islands. Trudy Lab.vulk. no.13:71-88  
' 58. (MIRA 12:3)

(Kurille Islands--Ocean bottom)

AUTHORS:

Andreyeva, I.E. and Udintsev, G.B.

SOV-11-58-10-1/12

TITLE:

The Structure of the Bottom of the Sea of Japan According to Data Obtained by the "Vityaz" Expedition (Stroyeniye dna Yaponskogo morya po dannym issledovaniy ekspeditsii na "Vityaze")

PERIODICAL:

Izvestiya Akademii nauk SSSR, Seriya geologicheskaya, 1958, <sup>№ 10</sup> Nr 10, pp 3 - 20 (USSR)

ABSTRACT:

The seismo-acoustic method of sea-bottom study was applied on a large scale by USSR for the first time in 1954 by the Institut Okeanologii AN SSSR (The Institute of Oceanology of the AS USSR) in the north-western part of the Pacific Ocean and in 1957 - for the study of the bottom of the Sea of Japan. The research ship "Vityaz" was especially built for this kind of research. Her equipment and instruments were devised by the Akusticheskiy Institut AN SSSR (the Institute of Acoustics of the AS USSR). The authors describe the results of these studies which were largely based on methods developed abroad [Ref. 9-23], such as the study of reflected and refracted sound-waves produced by explosive charges dropped to the sea bottom. This way three strata were discovered on the bottom of the western

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The Structure of the Bottom of the Sea of Japan According to Data Obtained  
by the "Vityaz'" Expedition

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part of the basin of the Sea of Japan. The first is a superficial sedimentary stratum 1 to 1.5 km thick. The second is an underlying basaltic stratum, 6.5 to 7.5 km thick. The third is composed of ultrabasalts. It was also found that the primary complex-tectonic relief of the Sea of Japan basin was covered by a thick smooth, sedimentary layer. There are 3 tables, 1 map, 4 diagrams, 7 graphs and 23 references, 8 of which are Soviet, 12 US, 1 Japanese and 2 English.

SUBMITTED: April 7, 1958

ASSOCIATION: Institut okeanologii AN SSSR (The Institute of Oceanology of the AS USSR)

1. Oceanography--Japan 2. Ocean bottom--Analysis 3. Seismic waves---Applications 4. Sound--Applications

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UDINTSEV, G.B.

Geological results of the "Vitiáz'" expedition in the western  
part of the Pacific Ocean. Biul. MOIP. Otd.geol. 33 no.4:  
152-153 J1-Ag '58. (MIRA 11:11)  
(Pacific Ocean--Ocean bottom)

**AUTHORS:**

Sysoyev, N N . Udintsev, G B.  
Andreyeva, I. B

20-119-3-52/65

**TITLE:**

The Results of Seismic-Acoustic Exploration of the Bottom of the Japan Sea (Rezultaty seysmo-akusticheskikh issledovaniy dna Yaponskogo morya)

**PERIODICAL:**

Doklady Akademii Nauk SSSR, 1958, Vol 119, Nr 3, pp. 575-578 (USSR)

**ABSTRACT:**

The two institutes mentioned below carried out the mentioned investigations on the ship "Vityaz" in 1957. The mentioned method contributed already (Refs. 1-3) to the collection of important material from various oceans. In the course of earlier works (Ref. 4) the main features of the tectonics of the Yaponskogo sea and the distribution of the ground deposits could be found out roughly. Therefore, it was of interest to continue these works. The seismic-acoustic investigations were carried out along 2 cross sections in vertical position to each other (Fig. 1). The working method corresponded in general to ref. 1. Explosions

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of the Bottom of the Japan Sea

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of trinitro-toluene-charges which were released at a certain depth served as source of the sound waves. 2 ships were used for the work: an assistant ship sailed along the chosen cross section and released explosions at certain periods of time while the "Vityaz'" at the beginning of the cross section received the acoustic signals of the explosions by means of hydrophones. The assistant ship sailed along the two cross sections twice in both directions. At each cross section about 14 explosions were released at a distance of about 6-8 km. The time of each explosion was radioed to the "Vityaz'" and recorded on the band of the oscillograph. The main informations on the upper layers of the ground were obtained from the data on the propagation of the reflected waves. The results of the computations are given on table 1. It can be concluded from it that here the ground surface does not form a clearly distinctive reflecting boundary. It reflects only the high frequency components while the others entered the mass of the surface and were reflected or refracted only at a

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The Results of Seismic-Acoustic Exploration  
of the Bottom of the Japan Sea

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depth of 100-600 m. 2 pairs of hydrographs directed opposite (vstrechnyy) to each other were constructed from the data on the entering of refracted waves and data on the limit velocity of the sound as well as on the depth of the refracting boundaries of the deeper seated ground layers. 2 layers with considerably different limit velocities in both cross sections could be distinguished. The velocities differed in both cross sections. This difference seems to be due to measuring errors and to the fact that the actual geological conditions did not agree with the idealized assumptions the computation was based on. Apparently a basaltic layer of a thickness of from 6-7 to 7-8 m is stratified under the loose deposit. As it seems to the authors the results prove the fact that a considerable mass of loose ground deposits exists in the western part of the Yaponskoye sea which is not separated by distinct boundaries. The change of the thickness of this layer is obviously connected with the supply of deposits from the continent and with the relief of the subjacent

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BOGOROV, V.G.; BRUYEVICH, S.V.; FEDOSOV, M.V.; UDINTSEV, G.B.

Methods of oceanographic research in the U.S.S.R. *Nek. Probl.*  
i rez. okean. issl. no.1:12-16 '59. (MIRA 13:2)  
(Oceanographic research)



ZENKEVICH, L.A.; LISITSYN, A.P.; UDIMSEV, G.B.

Ocean depths as a subject for study. Itogi nauki: Dost.okean.  
no.1:7-26 '59. (MIRA 12:10)  
(Oceanography)

UDINTSEV, G.B.

Studying the relief of sea and ocean bottoms. Itogi nauki:  
Dost.okean. no.1:27-90 '59. (MIRA 12:10)  
(Ocean bottom)

СЕНТЕНОВ, Г. П.

"The Bottom Topography and the Study of Ocean Tectonics."

"The Trench Topography of the Pacific."

report to be submitted for the Intl. Oceanographic Cong. New York City,  
31 Aug - 11 Sep 1959.

(Inst. Oceanology Moscow)

SOV/49-59-11-22/28

AUTHORS: Neprochnov, Yu. P., and Udintsev, G. B.

TITLE: Velocity Measurements of Elastic Waves in Porous Sediments of the Ocean

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya 1959, Nr 11, pp 1699-1701 (USSR)

ABSTRACT: Experiments were carried out by the Institute of Oceanology, Academy of Sciences USSR, in 1957 on board the ship "Vityaz" where the velocity of elastic waves in porous deposits of the Japan Sea were investigated. Similar experiments were carried out in the Black Sea in 1957 to 1958. Typical oscillograms obtained by the ultrasonic seismoscope UZS-2 placed on the sea bed at the points 1 to 16 along a profile are illustrated in Figs 1 and 2. The results of measurements showed an agreement of the obtained velocities with those in the top layer of 100 m thick. The maximum discrepancy was about 5%. There are 2 figures and 6 references, 3 of which are Soviet and 3 English.

ASSOCIATION: Akademiya nauk SSSR, Institut okeanologii (Academy of Sciences USSR, Institute of Oceanography)

SUBMITTED: February 19, 1958

Card 1/1

✓

DOBROVOL'SKIY, A.D.; IONIN, A.S.; UDINTSEV, G.B.

History of investigations in the Bering Sea. Trudy Inst. okean.  
29:5-16 '59. (MIRA 12:12)  
(Bering Sea--Oceanographic research)

UDINTSEV, G.B.; BOYCHENKO, I.G.; KANAYEV, V.F.

Bottom contour of the Bering Sea. Trudy Inst. okean. 29:17-64  
'59. (MIRA 12:12)

(Bering Sea--Submarine topography)

GANSON, P.P.; ZENKEVICH, N.L.; SERGEYEV, I.V.; UDINTSEV, G.B.

Maximum depths of the ocean. Priroda 48 no.6:84-88 Ja '59.  
(MIRA 12:5)

1. Institut okeanologii AN SSSR, Moskva.  
(Deep-sea sounding)

3(9)

AUTHORS:

Zhuze, A. P., Petelin, V. P.,  
Udintsev, G. B.

SOV/20-124-6-33/55

TITLE:

The Problem of the Origin of Diatomaceous Oozes Containing  
*Ethmodiscus rex* (Wall.) Hendey  
(K voprosu o proiskhozhdenii diatomovykh ilov s *Ethmodiscus*  
*rex* (Wall.) Hendey)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 6, pp 1301-1304  
(USSR)

ABSTRACT:

Bottom sediments occur in the tropical zone of the ocean which consist almost entirely of shells of the diatoms mentioned in the title. Their thickness attains 5-7 m in depressions. The portion of other organic remains in these oozes is very insignificant. Since *E. rex* rarely occurs in tropical plankton, the problem of the origin of these oozes is broached. *E. rex* is a Recent oceanic species of the tropical zone of the ocean and occurs, for example, along the Californian coast the entire year where the warm Californian current flows by (Ref 10); further, in the western part of the Pacific up to 42° north latitude, and finally in the Indian Ocean (Ref 5). This is

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The Problem of the Origin of Diatomaceous Cozes  
Containing *Ethmodiscus rex* (Wall.) Hendey

SOV/20-124-6-33/55

practically all that is known about the distribution of *E. rex* in the world oceans. Figure 1 shows a summary of the distribution of *Ethmodiscus* cozes. Various hypotheses were made concerning the cause of the rarity of these diatoms:  
a. the cozes are redeposited and are of Tertiary origin (Ref 11).  
b. the sudden and therefore very short development of *E. rex* (Ref 12).  
c. the durability of the shells of these diatoms. Particles with special properties are deposited in narrowly limited areas by complicated relations between the currents, the relief of the ocean floor, and the size and shape of the sedimentary particles (Ref 8). The authors would like to divide the problem into two parts: A. the reason for the large proportion of shells of *E. rex* in sedimentation in comparison with other diatoms. B. the irregular distribution of the cozes mentioned on the ocean floor. They answer these questions in the following manner: A. the shell of *E. rex* is much larger (300 - 1600  $\mu$ ) than the shells of other tropical diatoms, is better preserved, and is supplied in large quantities by this species which lives the entire year. The authors reject the hypothesis that these cozes are redeposited. Further examples of the lack of agreement of the role of diatoms in plankton

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The Problem of the Origin of Diatomaceous Oozes  
Containing *Ethmodiscus rex* (Wall.) Hendey

SOV/20-124-6-33/55

and sediment could be cited. B. The shell size of *E. rex* is also of significance in answering this question. Such large particles have a high suspensionability in sea water, sink only slowly to the bottom, and therefore react especially easily to the slightest water movements in the sediment near the floor. This must lead to a predominant downward washing of the *Ethmodiscus* shells by basal elevations into the depressions. The material collected during the 25th voyage of the "Vityaz" expedition ship in the Philippine Trench of the Pacific has fully confirmed the above considerations of the authors. Consequently they arrive at the conclusion that the thick accumulations of pure *Ethmodiscus* ooze in the Pacific are of Recent origin. There are 1 figure and 13 references, 2 of which are Soviet.

ASSOCIATION: Institut okeanologii Akademii nauk SSSR  
(Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: October 6, 1958, by N. M. Strakhov, Academician

SUBMITTED: October 2, 1958  
Card 3/3

3(9) 3.6000

67273

AUTHOR: Udintsev, G.B.

SOV/20-129-4-57/68

TITLE: Results of Seismic<sup>12</sup>-acoustic Investigations of the Structure of the Bottom of the Pacific Ocean Southwest of Hokkaido Island

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 4, pp 923-925 (USSR)

ABSTRACT: During the course of several years' work, the author's institute together with the Akusticheskiy institut AN SSSR (Institute of Acoustics of the AS USSR) investigated the structure of the bottom of the ocean located about 700 km southwest of Hokkaido. This was the twenty-eighth trip of the ship "Vityaz'".<sup>13</sup> At this location the institutes wanted to find out the thickness of the deposits and of the most important crustal layers which would characterize the structures found at the boundary between the oceanic basin and the embankment which follows the Kurilo-Kamchatskiy trench in a northeasterly direction. Three profiles perpendicular to the strike of the embankment were investigated: I (north) on the arch of the embankment (depth of the ocean from 5180 to 5550 m); II (middle) on the southwestern flank of the embankment (depth 5600 to 5750 m); III (south) on the floor of the north-

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Results of Seismic-acoustic Investigations of  
the Structure of the Bottom of the Pacific Ocean  
Southwest of Hokkaido Island

SOV/20-129-4-57/68

western Pacific deep (depth 5650 to 5800 m). The length of profile I is 110 km, that of the rest 70 km. The method involving a movable center of explosion and recording the times of the direct, refracted and reflected waves was used. The method is identical to others of the author's institute (Refs 1,4-6) and to that used by foreign scientists (Refs 7,8,9). The results of the calculations showed that: beneath the ocean floor is a layer which occurs in all three profiles and which transmits the waves with a speed of 1.6 to 2.0 km/sec. This speed apparently increases towards the base of this layer. The low frequency components which were reflected from the surface underlying this layer are at least twice as intensive as the reflections from the floor of the ocean (similar during the 19th trip of the "Vityaz'", Ref 3). A group of refracted waves having a critical speed of 6.5 km/sec along the interface were traced in each profile. Such waves are usually identified with the upper boundary of the basaltic layer. In profile I waves having a critical speed of 9.0 km/sec were registered. It is still unclear what would cause such a great

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Results of Seismic-acoustic Investigations of  
the Structure of the Bottom of the Pacific Ocean  
Southwest of Hokkaido Island

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difference in the Mohorovicic discontinuity (of 8.3 km/sec) and if, indeed, such a high value may be assigned to the discontinuity. The author believes that the group of waves having a critical speed of 5.3 km/sec which were observed at the south end of profile II and the north end of profile III may be identified with a layer of volcanics (as in the region of the Tonga trench, Ref 10). The thickness of the sedimentary mantle varies greatly; between 100 and 560 meters. The basaltic layer (profile I) is 7 km thick. The layer of volcanics (at the point of contact of profiles II and III) is about 1 km thick. It appears to the author that the above results, including the absence of a granitic layer, agree with those of other workers (Refs 6,11). That the thickness of sediments in the arched area of the embankment is greater than on the southeastern flank (discovered by K.B. Vakar, Institute of Acoustics of the AS USSR), may possibly be explained by a migration in time of the axis of the embankment towards the Kurilo-Kamchatskiy trench and the associated formation of the Kurilo-Kamchatskaya geosyncline. It can only be suggested

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Results of Seismic-acoustic Investigations of  
the Structure of the Bottom of the Pacific Ocean  
Southwest of Hokkaido Island

SOV/20-129-4-57/68

that the great variation in thickness of the sedimentary layer is due to the irregularities in the relief on the basement. There are 2 figures and 11 references, 5 of which are Soviet. ✓

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: July 14, 1959, by D.I. Shcherbakov, Academician

SUBMITTED: July 10, 1959

Card 4/4



UDINTSEV, G. B.

"Maximum Depths of the World Ocean and Researches in Deep-Sea Trenches  
By the Expedition of the 'Vityaz'"

report to be submitted for the Intl. Geographical Union, 10th General Assembly  
and 17th Intl. Geographical Congress, Stockholm, Sweden, 6-13 August 1960.



UDINTSEV, G. B., AND ZHIVAGO, A. V.

"Geomorphology of Sea Beds in the USSR and Modern Problems of Marine  
Geomorphology"

report to be submitted for the Intl. Geographical Union, 10th General Assembly  
and 19th Intl. Geographical Congress, Stockholm, Sweden, 6-13 August 1960.

UDINTSEY, G. B.

PHASE I BOOK EXPLOITATION

SOV/5331

International Geological Congress. 21st, Copenhagen, 1960.

Morskaya geologiya (Marine Geology) Moscow, Izd-vo AN SSSR, 1960.  
205 p. 2,500 copies printed. (Series: Doklady sovetskikh  
geologov, problema 10)

Editorial Board: P. L. Bezrukov, Resp. Ed.; A. V. Zhivago, V. P.  
Zenkovich and G. B. Udintsev; Ed. of Publishing House: V. S.  
Sheynman; Tech. Ed.: V. Karpov.

PURPOSE: This book is intended for geologists and oceanographers.

COVERAGE: The book contains 18 articles representing the reports  
given by Soviet geologists at the 21st. International Geological  
Congress. Individual articles deal with the bottom topography,  
sedimentation, and tectonics of oceans (Western Pacific and  
Southern Indian), as well as the geomorphology and tectonics of  
the Black and Caspian Seas and Soviet sectors of the Baltic.  
An English résumé accompanies each article. No personalities

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Marine Geology

SOV/5331

are mentioned. References follow individual articles.

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2

KANAYEV, V.F.; UDINTSEV, G.B.

Study of submarine relief during oceanographic expeditions.  
Trudy Inst. okean. 44:3-53 '60. (MIRA 14:2)  
(Ocean bottom)

ZVEREV, S.M.; KOVYLIN, V.M.; UDINTSEV, G.B.

Recent data on the tectonics of the northwestern submarine elevation  
of the Pacific Ocean. Dokl. AN SSSR 135 no.6:1461-1464 D '60.  
(MIRA 13:12)

1. Institut okeanologii Akademii nauk SSSR i Institut fiziki Zemli  
Akademii nauk SSSR. Predstavleno akademikom N.S.Shatskim.  
(Pacific Ocean--Submarine geology)

ZHIVAGO, A.V.; LISITSYN, A.P.; UDINTSEV, G.B.

Problems in marine geology and geomorphology. Okeanologia 2  
no.3:469-488 '62. (MIRA 15:7)  
(Pacific Ocean---Submarine geology)

LISITSYN, A.P.; UDINTSEV, G.B.

Oceanographic ships. Okeanologiya 2 no.3:514-526 '62.  
(MIRA 15:7)  
(Oceanographic research ships)

UDINTSEV, G.B.; LUNARSKIY, G.N.; MARAKUYEV, V.I.; BARINOV, L.G.;  
SEDEL'NIKOV, V.N.

Use of the "Ladoga" phototelegraph apparatus for recording  
depth measurements obtained with echo sounders. Okeanologiya  
2 no.6:1093-1103 '62. (MIRA 17:2)

1. Institut okeanologii AN SSSR.



UDINTSEV, G.B.

Configuration of the ocean bottom and tectonic problems. Trudy  
Okean kom. 10 no.3:38-44 '62. (MIRA 15:3)  
(Submarine geology)

UDINTSEV, G.B.

Recent data on the configuration of deep-sea trenches in the western part of the Pacific Ocean. Trudy Okean.kom. 10 no.3:45-65 '62.  
(MIRA 15:3)

(Pacific Ocean--Submarine topography)

UDINTSEV, G.B.

Bottom structure of the central part of the Pacific Ocean. Biol.  
MOIP.Otd.geol. 37 no.5:168 S-O '62. (MIRA 15:12)  
(Pacific Ocean--Ocean bottom)

BOGATIKOV, O.A.; GROSHEV, N.A., kand.sel'skokhoz.nauk (Moskva); DAVYDOV,  
V.D.; UDINTSEV, G.B.

News, events, and facts. Priroda 51 no.4:106-112, 114-116 Ap  
'62. (MIRA 15:4)

1. Institut geologii rudnykh mestorozhdeniy, petrografii,  
mineralogii i geokhimii AN SSSR, Moskva (for Bogatkov). 2. Gosu-  
darstvennyy astrcnomicheskij institut im. P.K.Shernberga, Moskva  
(for Davydov). 3. Institut okeanologii AN SSSR, Moskva (for  
Udintsev).

(Science news)

UDINTSEV, G. B.

Relief and Structure of the Pacific Ocean Bottom

report submitted for the 13th General Assembly, IUGG (Oceanography) Berkeley,  
California, 19-31 Aug 63

LISITSYN, A.P., kand.geol.-mineral.nauk; UDINTSEV, G.B., kand.geograf.nauk

Present state and tasks of the geology of the world oceans. Vest.  
AN SSSR 33 no.7:21-32 JI '63. (MIRA 16:8)  
(Submarine geology)

UDINTSEV, G.B.

Bottom configuration and tectonics in the Far Eastern seas and the adjacent regions of the Pacific Ocean. Okeanologia 1 no.3: 456-465 '61.

"The earth beneath the sea" by F.P.Shepard.

569-570  
(MIRA 16:11)

1. Institut okeanologii AN SSSR.

UDINTSEV, G.B.

New maps of the bottom relief in the Pacific Ocean. Okeanologia 3 no.1:  
169-175 '63. (MIRA 17:2)



UDINTSEV, G.B.

Problems of the geomorphology and tectonics of the ocean bottom  
at the 13th General Assembly of the International Union of  
Geodesy and Geophysics. Izv. AN SSSR. Ser. geog. no. 2:152-157  
Mr-Apr '64. (MIRA 17:5)

ACCESSION NR: APh018060

S/0213/64/CO4/001/0156/0166

AUTHORS: Udintsev, G. B.; Agapova, G. V.

TITLE: A method of marine geomorphological investigation by means of the precision automatic depth recorder Ladoga

SOURCE: Okeanologiya, v. 4, no. 1, 1964, 156-166

TOPIC TAGS: marine geomorphology, depth recorder, automatic depth recorder, Ladoga depth recorder, sonic depth finder, recording drum, phase determination, multiple reflection

ABSTRACT: The Ladoga instrument has greatly increased the possibility of deciphering complex records of multiple reflections from a dissected bottom, and it has markedly improved the chances of recording reflections from interfaces within the upper layers of bottom sediment. The instrument is a sonic depth finder equipped with special scales for computing depths. Three scales are employed (of transparent plastic) for velocities of the recording coil of 60, 90, and 120 rpm. Computations are simple, since one revolution of the 60-rpm coil measures the

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ACCESSION NR: AP4018060

passage of 1 sec of sound signal, of the 90-rpm coil 0.75 sec, and of the 120-rpm coil 0.5 sec. The depth is easily calculated by knowing the velocity of the signal and the time of revolution of the coil. The record is made on a tape 496 mm wide, 480 mm of which is used by the instrument. It is necessary to determine the phase between the rotating coil and the reflected signal. This may be done and tabulated for each scale (60, 90, 120 rpm). Precision time marks (5 and 10 min) are placed on the recording tape. The nature of the floor determines the scale used. The 120-rpm scale gives the highest resolution, but if depth changes too rapidly the use of this scale leads to frequent shifts in phase and to breaks in the record. If the 60-rpm scale is used, the resolving power is diminished but the record is more stable. The 90-rpm scale, of course, gives intermediate values. The authors conclude that a number of problems relating to complex records can be deciphered by the Ladoga instrument, but that this work will require careful analysis, particularly of the nature of the acoustical phenomena recorded during depth measurements. Orig. art. has: 4 figures, 2 tables, and 3 formulas.

ASSOCIATION: Institut okeanologii AN SSSR (Institute of Oceanography AN SSSR)

SUBMITTED: 29Aug63

DATE ACQ: 18Mar64

ENCL: 00

SUB CODE: AS

NO REF SOV: 003

OTHER: 001

Card 2/2

BOGDANOV, A.A.; UDINTSEV, G.B.; KHAIN, V.Ye.; CHERNOOK, S.V.

Plan for compiling the First International Tectonic Map of  
the Earth. Sov. geol. 7 no.11:99-105 N '64. (MIRA 18:2)

1. Moskovskiy gosudarstvennyy universitet, Institut okeanologii  
AN SSSR i Komissiya po mezhdunarodnym tektonicheskim kartam  
AN SSSR.

UDINTSEV, G.B.; AGAPOVA, G.V.; BERSENEV, A.F.; BUDANOVA, L.Ya.; ZATONSKIY,  
L.K.; ZENKEVICH, N.L.; IVANOV, A.G.; KANAYEV, V.F.; KUCHEROV, I.P.;  
LARINA, N.I.; MAROVA, N.A.; MINEYEV, V.A.; RAUTSKIY, Ye.I.

New relief maps of the bottom of the Pacific Ocean. Geofiz. biul.  
no.14:159-167 '64. (MIRA 18:4)

LYUBIMOVA, Ye.A., kand. fiz.-matem. nauk; UDINTSEV, G.B., kand. geol.-mineral.  
nauk

The geothermal expedition "Amphitrite". Vest. AN SSSR 34 no.1:  
59-64 Ja '65. (MIRA 18:2)

IYORIKOVA, Y.A.; UDINTSEV, G.M.

Expedition for measurement of the thermal flux through the bottom  
of the Pacific Ocean. Izv. AN SSSR Fiz. zem. no.5:117-118 '65.  
(MIRA 18:6)

L 21216-66 EWT(1) GW

ACC NR: AP6011950

SOURCE CODE: UR/0213/65/005/006/1113/1119

AUTHOR: Udintsev, G. B.

ORG: none

TITLE: Thirty-sixth voyage of the scientific research vesse<sup>1255</sup> 'Vityaz'

SOURCE: Okeanologiya, v. 5, no. 6, 1965, 1113-1119

TOPIC TAGS: tectonics, oceanographic expedition, oceanographic personnel, stratigraphy, biology, geomorphology, meteorology, seismology

ABSTRACT: The 36th voyage of the "Vityaz'" took place in the Indian Ocean during the period 5 October 1964 through 6 March 1965. The principal objective was integrated geological and geophysical investigation of different tectonic zones of the Indian Ocean. Five months were spent on this voyage. The polygon method was used, involving detailed studies of only limited by typical tectonic zones. The size of these polygons varied from 20x20 to 20x40 miles. The expedition, which departed from Vladivostok, consisted of 129 men, of which 64 were scientific personnel; the expedition was headed by G. B. Udintsev of the Institute of Oceanology. There were ten detachments, with the following chiefs: V. F. Kanayev (geomorphology and tectonics of the floor), Yu. A. Bogdanov (lithology), Ye. A. Romankevich (stratigraphy and geochemistry of bottom sediments), Yu. P. Neprochnov (seismoacoustic investigations), V. A. Tulin (gravimetry), V. I. Marakuyev (research Techniques), A. Ye. Abayev

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UDC: 551.46.062(047)

2



L 21216-66

ACC NR: AP6011950

3

(hydrography), F. A. Pasternak (hydrobiology), V. I. Kuksa (marine physics), L. P. Shkotkin (meteorology). Other investigations included acoustic and geothermal investigations, spore and pollen analysis of bottom deposits and study of bottom rocks. A map accompanying the text shows the stations occupied and the polygons investigated. A chronological account of the expedition is given, with reports on the most important observations in the most interesting polygons. The voyage was completed at Vladivostok on 6 March 1965, after sailing 153 days, a total distance of 23,294 miles. Echo soundings were made along 22,683 miles of the track and magnetic surveys along a distance of 8,000 miles. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 08, 04, 06 / SUBM DATE: none

Card 2/2 dda

L 21209-66 EWT(1) GW

SOURCE CODE: UR/0213/65/005/006/0993/0998

ACC NR: AP6011943

AUTHOR: Udintsev, G. B.

ORG: Institute of Oceanology, AN SSSR (Institut okeanologii AN SSSR)

TITLE: New data on the structure of the floor of the Indian Ocean

SOURCE: Okeanologiya, v. 5, no. 6, 1965, 993-998

TOPIC TAGS: oceanographic expedition, tectonics, ocean floor topography, earth crust

ABSTRACT: Data from the 36th voyage of the "Vityaz", combined with data from other Soviet and foreign expeditions, have been used in compiling a new tectonic map of the floor of the Indian Ocean, accompanying the text. There are four important (with many subdivisions) classes of structural zones: a) Oceanic platforms or monocratons, which are the most stable parts of the floor, which experience predominantly subsid- ing vertical movements. b) Oceanic ridges with a block structure or aseismic ridges. These are narrow and high uplifts rising hundreds or even thousands of meters above the monocratons. Their length greatly exceeds their width. They are nearly linear. c) The recent Sonda geosynclinal zone, including the Sonda marginal oceanic geosynclinal trench, the folded zones of the Sonda island arc and deep geosynclinal basins of the marginal seas. d) The zone of recent taphrogenesis in the region of the mid-oceanic ridges. Also included is a schematic cross section of the earth's crust through the mid-Indian Ocean Ridge. The analysis of the data collected on the 36th voyage will be published

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L 21209-66

D

ACC NR: AP6011943

in the form of a collection of articles devoted to investigations of the earth's crust and the upper mantle of the Indian Ocean. Orig. art. has: 2 figures. [JFRS]

SUB CODE: 08 / SUBM DATE: none / ORIG REF: 007 / OTH REF: 003

*fw*

Card 2/2

UDINTSEV, G.B.; CHERNYSHEVA, V.I.

Rock samples of the upper mantle of the earth from the rift  
zone in the Indian Ocean. Dokl. AN SSSR 165 no.5:1147-1150  
D '65. (MIRA 19:1)

1. Institut okeanologii AN SSSR. Submitted July 31, 1965.

L 46730-66 EWT(1) GW

ACC NR: AP6019459

(N)

SOURCE CODE: UR/0384/66/000/001/0056/0064

AUTHOR: Zaklinskaya, Ye. D. (Candidate of geologico-mineralogical sciences); Udintsev G. B. (Candidate of geographical sciences)

ORG: none

TITLE: The Indian Ocean under the keel of the Vityaz' ✓

SOURCE: Zemlya i Vselennaya, no. 1, 1966, 56-64

TOPIC TAGS: oceanographic ship, oceanographic expedition, upper mantle

ABSTRACT: Research conducted by the oceanographic vessel Vityaz' in the Indian Ocean starting in October 1964 is described. The research, carried out in connection with the International Indian Ocean Expedition, was aimed at the study of the upper mantle of the earth. The most significant aspect of the voyage is described as the gathering of new data on the structure of the rift zone in the Central Indian Ocean ridge and ore specimens collected in this area. The analysis of the chemical composition, physical properties and absolute age of these ore samples will do much to clarify the processes by which the earth's crust develops in the ocean. Orig. art. has: 8 photographs.

SUB CODE: 08/

SUBM DATE: none

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25  
B

ACC NR: AP6032580

SOURCE CODE: UR/0030/66/000/009/0098/0103

AUTHOR: Udintsev, G. B.

ORG: none

TITLE: Geomorphology and tectonics of the ocean floor

SOURCE: AN SSSR. Vestnik, no. 9, 1966, 98-103

TOPIC TAGS: geomorphology, tectonics, earth crust, upper mantle, earthquake

ABSTRACT:

Until recently geological investigations were limited to the study of submarine relief using widely separated cross sections and bottom deposits from the surface layers taken at separate points, also considerably far apart from each other. Recently, however, the range of marine geological investigations has been greatly expanded; they are conducted regularly in various parts of the oceans with detailed studies performed in certain areas. Moreover, the type of these investigations has changed substantially. The application of geophysical and geochemical methods made it possible to obtain data on the deep structure of the Earth's crust and upper mantle under the oceans and to determine the age of rocks forming certain structures. This expansion of activity made it possible to gain knowledge of the tectonics of the ocean floor.

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UDC: 551.462:551.24

ACC NR: AP6032580

Of great interest are attempts to devise new theories of the development of the Earth's crust under the oceans, which would supplement the present-day geosynclinal theory with concepts of qualitatively different processes. In the Soviet Union, A. P. Vinogradov advanced the theory that the formation of the Earth's crust under the oceans is a result of zonal melting of primary material. It is based on the idea that the crust is closely associated with the mantle. V. V. Belousov believes that new ocean troughs can be formed as a result of basaltification. In his recent works he thoroughly analyzed the interaction of the upper mantle and the continental crust. V. A. Magnitskiy developed that part of the zonal melting theory concerning the rising of melts leading to the formation of the crust. M. V. Muratov substantiated that the ocean troughs have different geological ages. G. D. Afanasyev proposed a new explanation for differences observed in the geophysical structure of the crusts of continent and ocean regions. In his opinion, these differences result from the changes in the physical state of crustal material under the oceans. V. Ye. Khain has considered the complex system of tectonic processes transforming the Earth's crust.

The importance of midocean ridges in the development of the

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ACC NR: AP6032580

general structure of the Earth has been recently substantiated. Data obtained indicate that these ridges do not simply form a specific very active tectonic structure of the ocean floor but represent a particular tectonic region which plays a most important part in the development of Earth's crust, no less significant than the continental geosyncline regions. It was established that midocean ridges are one of the largest tectonic regions of the Earth. Their present-day active area is almost as large as that of the folded geosyncline regions of the continents. Simple calculations show that the ancient and Epimesozoic platforms of the continents occupy approximately 20% of the Earth's surface, folded Cenozoic and recent geosyncline region—10%, thalassocraton or ocean platforms—40%, and the zones of midocean ridges—30%. Thus, geological phenomena occur in geosyncline and folded regions on a scale comparable to those taking place in the midocean ridges.

Very valuable for the understanding of tectonic processes in midocean ridges are investigations of magmatic rocks cropping out in the fractures of rift zones. Such investigations conducted in 1964 to 1965 by the "Vityaz" provided a complete collection of rock samples.

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characterizing the cross section of the Earth's crust of the midoceanic ridge of the western Indian Ocean. The samples were collected from two cross sections of the rift zone. Samples of basic effusive rocks, basalts, were collected from the peaks of rift ridges and upper part of the slopes, gabbro from the lower basic rocks, ultrabasic peridotites and dunites containing chromite inclusions from still lower regions.

Investigations of the physical properties of these rocks conducted at the Institute of the Physics of Earth, Academy of Sciences USSR, and at Moscow University by G. N. Petrova, O. I. Silayeva, Ye. I. Bayuk, M. P. Volarovich, Ye. A. Lyubimova, D. M. Pecherskiy, A. G. Gaynanov, and others have shown that the velocities of longitudinal waves are very small. In slightly serpentized peridotites velocities of longitudinal waves at atmospheric pressure were 4.4–6.0 km/sec, while in serpentinites they were about 3.0–4.95 km/sec. Under pressure of 4000 atm the velocities increased to 6.1–6.5 km/sec and 4.1–5.2 km/sec, respectively. A linear dependence of velocities of longitudinal waves on the degree of serpentization, density of rocks, electrical conductivity, and remanent magnetization was observed. These data indicate a certain decrease in density as a result of serpentization and the formation of magnetite grains during the process. The rocks are anisotropic in respect to their physical

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properties. The anisotropy in the velocity of longitudinal-wave reaction is 20%; it is up to one order of magnitude for the electrical conductivity. This particular type of anisotropy leads to the conclusion that the rocks have undergone strong dynamic metamorphism even prior to serpentinization. The dependence of the physical parameters (especially magnetic) on the depth from which the samples were obtained is quite noticeable. This shows that the depth of occurrence of rocks has not changed since the time of their serpentinization. The stability of magnetization, in particular the variation of magnetization versus the applied alternating magnetic field, which is a function of the temperature at which a ferromagnetic is formed, was used in determining the temperature of serpentinization of peridotites and was found to be 400–450°C.

The physical parameters of ultrabasic rocks forming the basement of the crust of the midocean ridge were found to have considerably lower longitudinal-wave velocities than analogous continental rocks. Assuming the same degree of serpentinization, the velocities should be 6.4 and not 4.4–5.2 km/sec and 7.4–8.2 and not 6.1–6.5 km/sec. The thermal conductivity of ultrabasic rocks was found to be almost

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half that of the continental rocks, the dielectric constant higher by one order of magnitude, and electrical resistivity lower by three-fourths of one order.

It is believed that these phenomena can be attributed partly to the smaller degree of differentiation of rocks of the upper mantle under the oceans, as compared with similar continental rocks which show the results of repeated zonal melting.

Comparison of the physical properties of rocks from the section of rift zone and the depth of their occurrence with the data from deep seismic sounding conducted by Yu. P. Neprochenov shows that the basalt lavas and serpentinites probably correspond to the "second" seismic layer (with velocities about 5.0 km/sec), that basalt lavas and most likely gabbro correspond to the "basaltic" layer (6.7 km/sec), and the unserpentinized peridotites, having possibly acquired anisotropy, the layer of rocks in the mantle anomalous with respect to the velocity of longitudinal waves (7.0-7.2 km/sec). The latter rocks can be considered as subcrustal cavities in the upper mantle.

The material discussed above is in complete agreement with the theoretical and experimental results obtained by A. P. Vinogradov.

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in his research on zonal melting and corresponds to his theory of zonal melting of the primary material of the Earth, the composition of which is analogous to that of stony meteorites with basalt separation achieved by melting and with formations of periodities as a residual fraction.

The data obtained by the Soviet seismologists A. V. Vvedenskaya, L. A. Misharina, N. V. Golubeva, and L. M. Balakina on the strain orientation at the foci of earthquakes of midocean ridges and ocean coasts are of considerable interest. These data show very convincingly that the Earth's crust in the rift zone is being stretched. The existence of such stresses agrees well with the data on the heterogeneity of the upper mantle, obtained by means of deep seismic sounding by R. Rayt, I. P. Kosminskaya, and the author in various parts of the Pacific Ocean.

All these data indicate that the most active part in the development of the Earth's crust is being played by the geosyncline and mid-ocean tectonic regions which, according to the authors, should be called "geotaphrogenes." They are contrasted to continental platforms and thalassocratones, which are the regions of slow, evolutionary crustal development. It is not the preserved primary state,

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but rather the continuous zonal melting of the mantle's material and the gradual separation of basalt by melting that is typical of the thalassocratones. The development of continental platforms is probably even more complicated. In attempting to comprehend the significance of the regions in the tectonic development of the Earth, the author believes that in modern geotectonics the present geosyncline theory should be superseded by another more complicated tectonic theory which would include the concept of geotaphrogenes.

[FSB; v. 2, no. 12]

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Card 8/8

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(N)

SOURCE CODE: UR/0000/66/000/000/0153/0157

AUTHOR: Kovylin, V. M.; Neprochnov, Yu. P.; Udintsev, G. B.

ORG: none

TITLE: Use of ultrasonic waves to study the layering and speed of propagation of elastic waves in ocean sediments

SOURCE: AN SSSR. Institut fiziki Zemli. Geoakustika; ispol'zovaniya zvuka i ul'tra-zvuka v seysmologii, seysmorazvedke i gornom dele (Geoacoustics; the use of sound and ultrasound in seismology, seismic prospecting, and mining). Moscow, Izd-vo Nauka, 1966, 153-157

TOPIC TAGS: underwater explosion, ocean acoustics, oceanographic equipment, oceanographic ship, ultrasonic wave propagation

ABSTRACT: Experiments carried out by the Institute of Oceanology, AN SSSR to determine the speed of propagation of elastic waves and layering of ocean-bottom sediments are described. The speed was measured both in the laboratory, using core samples, and also directly on the ocean floor. The work began in 1957 and has continued since that time. Measurement of speeds of elastic waves in core samples was carried out using a UZS-2 seismoscope. Each core is sampled at 1 cm intervals along its length. The maximum experimental error in this series of tests is found to be 1.6%. Speeds range from

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1430 to 1620 m/sec. Results are given of tests on a 15 m long core. To measure the speed of elastic waves directly on the ocean bottom, a special apparatus was constructed, consisting of a supporting frame carrying the ultrasonic source and receiver. Signals from the receiver are carried by cable to the ship and recorded on a seismoscope. The source is usually buried to a depth of 50 cm in the sediments, and the separation between source and receiver is 50 cm. The last section discusses some problems of using commercial sounding devices in experimental studies. In recent years, a phototelegraphic recorder, "Ladoga", has been successfully used both in depth soundings and for studies of layering in the ocean sediments. This apparatus has been used on the *Vityaz'* in the Pacific and Indian Oceans, and on the *Petr Lebedev* and *Bataysk* in the Atlantic. Orig. art. has: 3 figures.

SUB CODE: 08, <sup>13</sup>/<sub>12</sub>      SUBM DATE: 28Mar66/      ORIG REF: 004/      OTH REF: 002

Card 2/2

ACC NR: AR7004118 (N) SOURCE CODE: UR/0169/66/000/012/G011/G011

AUTHOR: Udintsev, G. B.; Chernysheva, V. I.

TITLE: Rock formations of the upper Earth mantle in the rift zone of the Indian Ocean

SOURCE: Ref. zh. Geofizika, Abs. 12G75

REF SOURCE: Sb. 2-y Mezhdunar. okeanogr. kongress, 1966, Tezisy dokl. M., Nauka, 1966, 383

TOPIC TAGS: earth, ocean, earth crust, peridotite, dunite, gabbro, basalt, serpentinite, chromitite

ABSTRACT: Samples of ultrabasic rock: peridotite, dunite, chromitite, and serpentinites have been dredged up in the rift zone of the mid-Indian Ocean ridge. These samples were obtained from the bottom and slopes of the rift canyon; only samples of gabbro and basalts were obtained from the crests of the rift mountains. It is supposed that deep-seated mantle rock in the rift zone is being lifted and squeezed-out to the surface. [Translation of abstract] [GC]

SUB CODE: 08/

UDC: 551.14

Card 1/1



LYUBIMOVA, Ye.A.; UDINTSEV, G.B.

Expedition on the American scientific research ship "Argo".  
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zasluzhennyy deyatel' nauki, red.; TIKHOMIROV, P.Ye., prof., red.;  
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SHCHELKHUNOV, S.I., prof., red.; GHSSEN, A.I., dots., red.

[Instructions on conducting laboratory and field work for a course  
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1956. 189 p. (Leningrad. Sanitarno-gigienicheski meditsinski  
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1. Zaveduyushchiy kafedroy epidemiologii Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (for Bashenin).
  2. Chlen-korrespondent AMN SSSR (for Zhdanov, Babayants, TSinzerling, Shchelkunov).
  3. Deystvitel'nyy chlen AMN SSSR (for Anichkov).
  4. Chlen-korrespondent AMN SSSR i AN KazSSR (for Udintsev).
- (EPIDEMIOLOGY--STUDY AND TEACHING) (MIRA 11:4)

EXCERPTA MEDICA Sec 6/Vol 13/6 Internal Medicine June 59

2515. PROBLEMS OF REFLEX REGULATION IN THERAPY (Russian text) -  
Udintsev G. N. - ZDRAVOOKHR. KIR. 1957, 3 (3-7)

The problem of disturbed function of the higher centres of the CNS is discussed in relation to diseases of internal organs. Thus, in ulcer and chronic gastritis, a suppression of stimulatory processes in the cerebral cortex is observed, and also a weakening of inhibitory influences of the latter on the subcortical nuclei, i.e. the development of ulcer and chronic gastritis is based on an identical mechanism (Timeskov's opinion). According to Nachaeva, the gastric secretion is more intense during the night than during the day, and the content of free acid is 33% higher in nocturnal than in day-time gastric secretion. NaBr increases the gastric secretion and decreases the amount of free HCl; phenobarbital, Na-barbital and chloral hydrate decrease both the secretion and the amount of free HCl. In animal experiments Gorbadei demonstrated that the reflexes on i. v. or intra-arterially introduced substances varied with the depth and duration of narcosis, the nutritional state of the animal, and with the way of introduction. In this work a general reflex action on drugs is confirmed; introduced into one or another zone they normalized the disturbed equilibrium between the stimulatory and inhibitory processes of the cerebral cortex. Intra-arterial administration of therapeutic substances is proposed as a method of influencing the activity of the nervous and other systems and organs, as well as metabolic processes, in patients suffering from peptic ulcer, gastritis, bronchial asthma and arthritis deformans. (S)

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