

organisms, adopting both a trickling and active-sludge aeration method. The purpose was to keep the waters free of harmful effluent and thus prevent any damage to aquatic products, above all to fish.

The samples for the experiment were Ca-base acidic sulphite after decantry off the fermentable sugar. The result of the experiment proved quite promising. a. Organic materials in the waste liquor were decreased; b. Propagation of various microorganisms (pollutant consumer); c. Of the microorganisms ciliata were dominant. In this experiment, however, a reasonable decrease lignin did not occur.

IIDA H., 1962. On the water masses in the coastal region of the south-western Okhotsk Sea. *J. Oceanogr. Soc., Jap.*, 20th Ann. Vol., 272-278.

The coastal region of the south-western Okhotsk Sea is the region where almost all the water masses which play important roles in the Okhotsk Sea meet. The water masses are :

(i) The Sōya Warm Water derived from the Kuroshio Water, (ii) The water mass in the layers from the surface to 200 m which has minimal temperatures lower than 0°C at 75 to 150 m, (iii) The water mass in the layers deeper than 200 m with its chlorinity increasing with depth and reaching about 19.10‰ or more, (iv) The warm core north-east of the cape of Shiretoko derived from the Sōya Warm Water, (v) The lowest chlorinity water, of land origin, covers water mass, (iii) above from summer to winter, and (vi) the cold water belt between water masses (i) and (ii), which creeps up along the slope of the boundary layer between (i) and (ii).

ISTOMIN YU. V. and G. N. KUKLIN, 1962. Currents in the equatorial zone of the Pacific Ocean. (In Russian). *Met. i Gidrol.*, (11): 28-32.

The Cromwell Current was studied in 1961 aboard the *A.I. Voyeykov* at 154°W and again in 1962 (8-10 March) at 170°E. The latter observations were described in detail. A ft-long profile (130°E-80°W) shows the easterly components of currents in the equatorial zone of the Pacific Ocean. Quantitative estimates for the various currents are given in an attempt to define the vertical structure of currents in the area and the compensation mechanism involved. The significant Japanese and American studies of the Cromwell Current are briefly discussed.

AL'TMAN E. N., 1962. Research at sea using new oceanographic apparatus. (In Russian). *Met. i Gidrol.*, (12): 33-38.

The article describes the instruments and methods used in oceanographic studies carried out annually in the Black Sea and Sea of Azov since 1958. Emphasis has been on the study of aperiodic currents, temperature distribution and salinity.

JAYARAMAN R., R. VISWANATHAN and S. S. COGATE, 1961. Characteristics of sea water near the light house, Bombay. *J. Mar. Biol. Ass. Ind.*, 3 (1 and 2): 1-5.

An account of the hydrological conditions of the inshore waters off Prongs Reef Light House, Bombay is presented and discussed. Significant annual variations (between 1956 and 1959) in temperature, salinity and other biologically important factors are recorded. It is seen that these variations are related to prevalent meteorological conditions, such as rainfall, winds, etc. There appears to be a greater degree of association between winds and variations in the hydrological condition.

JEFFREYS H., 1962. Travel time for Pacific explosions. *Geophys. J. Roy. Astron. Soc.*, 7 (2): 212-219. Readings in studies by Carder and Bailey and Kogan of seismic pulses from Pacific explosions are studied. No significant variation of times of *P* with azimuth is found, and none according to whether the observing station is on an island or a continent. Up to 18°·6 the time appears to be a linear function of the distance with the same gradient as in European shocks, but the constant term is + 4.1 s instead of + 7.7 s. The difference is less at intermediate distances but approaches 2 s at 95°; its behaviour does not appear reconcilable with any modification of structure near the surface. Differences from the 1940 table reach about - 7 s at 10°.

*S* and *SKS* on the other hand appear to be about 4 s late, and a request is made to stations for comments on their readings that have been used in former papers.

*PcP* is early in comparison with the 1940 table by about the same amount as *P* at large distances.

JONES E. C., 1963. *Tremoctopus violaceus* uses *Physalia* tentacles as weapons. *Science*, 139 (3556): 764-766.

Immature octopods (*Tremoctopus violaceus*) have been found with numerous fragments of tentacles of the coelenterate *Physalia* attached to the suckers of their dorsal arms. The probable method of acquisition, the evidence of adaptation for holding the tentacles, and the possibility that the octopod uses these coelenterate tentacles as offensive and defensive weapons are discussed.

JONES P. G. W. and C. P. SPENCER, 1963. Comparison of several methods of determining inorganic phosphate in sea water. *J. Mar. Biol. Ass., U.K.*, 43 (1): 251-273.

Five methods of estimating dissolved inorganic phosphate in sea water are compared. Membrane-filtered inshore water from the Menai Straits was used in the study.

Wooster and Rakestraw's method gave higher results than Harvey's procedure. This was caused by some unidentified factor resulting in a non-sensitized reduction of molybdate in the former method.