

species of squirrels, *Callosciurus notatus*, *nigrovittatus*, *caniceps* and *lowii*, and two tree-shrews, *Tupaia glis* and *minor*, brought up to date.

We conclude with the application of a non-parametric test, the method of *m*-rankings<sup>3</sup>. This test has the advantage that the influence of the rainfall already discussed is still more reduced, for there is no connexion between lunar phase and rainfall, so that eventual influence of the rain is spread over the whole lunar month, which may strengthen the correlation, but does not enlarge the probability of the *m*-rankings test.

The rows of 'young' litters in Table 1 were shifted two places to the right, the last two figures being placed at the beginning of the row. The result, in Kendall's notation, was:

$$\chi_r^2 = 17.8; \quad W = 0.355; \quad n = 6; \quad m = 10.$$

$$(m-1) \frac{W}{1-W} = 4.953 \text{ with } \nu_1 = 4.8 \text{ and } \nu_2 = 43.2 \text{ degrees of freedom has a probability of } 0.002.$$

W. VAN DER BIJL

Royal Netherlands Meteorological Institute,  
De Bilt, Netherlands.

J. L. HARRISON

Colonial Office Research Unit,  
Institute for Medical Research,  
Kuala Lumpur,  
Malaya.

<sup>1</sup> Harrison, J. L., *Nature*, **170**, 73 (1952).

<sup>2</sup> Harrison, J. L., *Bull. Raffles Mus. Singapore*, **24**, 109 (1952).

<sup>3</sup> Kendall, M. G., "Rank Correlation Methods", chapter 6 (1948).

### Giant Ovaries of a Blue Whale

THE blue whale (*Balaenoptera musculus*) has the largest ovaries of any mammal. Of the combined weights of ovaries recorded by Mackintosh and Wheeler<sup>1</sup> from non-pregnant mature blue whales, the heaviest is 15 lb. The greatest recorded weight of ovaries from a pregnant female appears to be 35 lb. (H. W. Symons, 1953), but this whale, which was 89 ft. in length, had two corpora lutea of pregnancy associated with a single 8-ft. female foetus. More usually, the weight of the ovaries of a large pregnant blue whale is between 22 and 24 lb.

During the 1953-54 Antarctic whaling season, an 83-ft. female blue whale was worked up on the floating factory *Balaena*, in lat. 63° 56' S., long.



Fig. 1. Giant ovaries with metre rule for comparison. The large body at the front of the left-hand ovary is the corpus luteum of pregnancy

86° 12' E. The ovaries, which were associated with a 14-ft. female foetus, had a combined weight of 131 lb.—more than three times heavier than any previously recorded. The heavier of the pair, containing a large corpus luteum of pregnancy of mean diameter 20 cm., weighed 73 lb. with dimensions of 76 cm. × 49 cm. × 16 cm.; the other weighed 58 lb. and measured 68 cm. × 50 cm. × 14 cm. (see Fig. 1).

Their great size appears to be due largely to the ovarian architecture being on a grand scale, although an unusual amount of adipose tissue is present. Both ovaries have been frozen and will be described in detail at a later date.

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R. M. LAWS

National Institute of Oceanography,  
Wormley, Surrey.  
Jan. 25.

<sup>1</sup> Mackintosh, N. A., and Wheeler, J. G. F., *Discovery Reports*, **1**, 384 (1929).

### Inshore Surface Currents on the West Coast of the Union of South Africa

IN the course of research into the environment of the South African pilchard *Sardinops ocellata* Pappe, and the maasbanker or horse mackerel *Trachurus trachurus* Linnaeus, the importance of a knowledge of the surface currents near the commercial fisheries of these fishes off the west coast of South Africa was quickly shown. These two fishes are found in very large shoals quite close to the west coast. Their commercial importance may be gauged from the fact that in the season January–September 1953 some 151,000 tons of pilchards and 93,000 tons of maasbankers worth c. £5 million in finished products (meal, oil and canned fish) were caught in this area.

The eggs and larvæ of these fishes being planktonic are carried away from the spawning areas by surface currents. The main current off the west coast is the Benguela current, which usually has northerly and westerly components. This current tends to remove floating organisms such as fish eggs and larvæ away from the coast, and yet at certain times of the year these, as well as juvenile fish, abound in the small bays such as St. Helena Bay and Lamberts Bay, and later literally millions of adult fish, 3–5 years in age, are caught commercially off the west coast.

Another striking fact is that the *phyllosoma* stage of the rock lobster *Jasus lalandii* Milne Edwards has been found 950 miles west of Saldanha Bay. Again, this is a planktonic organism which tends to be carried away from the coast in surface currents, and yet adult rock lobsters are found in large concentrations all round the west coast, forming the basis of a very valuable export trade for the Union of South Africa.

The problem which arises is the means by which fish and invertebrate populations maintain their concentrations along the west coast in the face of apparently adverse water movements. One solution would be the presence of inshore-setting currents, which would tend to keep a proportion of the eggs and larvæ close to the coast.

Records of wrecks and strandings along the west coast suggest that on occasion inshore-setting currents