

pure cultures of *S. pluton* have been sprayed into healthy bee colonies, the organism has appeared to grow in coecal form in the mid-guts of the larvae for a day or two afterwards; then, for a further day or so, diminishing numbers of thick rod-like bacteria only were found. These forms appeared similar to the aerobic form of *S. pluton* which can be cultivated *in vitro*². The lumen of the mid-gut of the larval honeybee may not, therefore, be anaerobic. In a normal infection, *B. eurydice* may reduce oxygen tension enough to allow *S. pluton* to develop in coecal form as when a mixed culture of the organisms is grown with air in a closed bottle².

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¹ Bailey, L., *Nature*, **178**, 1130 (1956); *Bee World*, **38**, 85 (1957).

² Bailey, L., *J. Gen. Microbiol.*, **17**, 39 (1957).

Occurrence of the Muskrat in Hu Ma District, North-eastern China

THE muskrat, *Ondatra zibethica* L., has been introduced into many parts of Europe since 1905 and into the U.S.S.R. in 1927.

Its occurrence in the Amur region or Hehlung Kiang, on the northern part of Manchuria or north-eastern China, was first reported by Shaw and Chu¹, based on two living specimens and three dead ones collected by Mr. Tsong of the Animal Products Co. in early summer of 1954. Later, in the spring of 1955, Mr. C. Chang made a special trip to Hu Ma district, where he collected twenty-one specimens. Still later, Mr. T. H. Lo obtained a few more specimens and made some observations in the same region in the summer of 1956².

Hu Ma District lies on the southern bank of the Amur River. Its climate as a whole is rather cold. Winter is long, and air temperature may fall to -46° or even -49° C. Summer seems to be rather short and not very hot; the warmest weather in June, July and August being 35° C.

According to local information, individual muskrats have been observed in Hu Ma District for more than ten years. Due to the severe and long winter in this region, the shortness of growing season, and the lack of proper protection, the population of the animal increases rather slowly.

The coloration of the muskrat shows some variation. The head, neck and back of Hu Ma specimens are darker than the original stock. The size of both sexes, however, is smaller, largest specimens weighing only 2,200 gm.

The animal is chiefly nocturnal, but is also active in daytime, and can be seen in bright sunlight. Nest and tunnels are excavated underground and rather complex in nature. There is only one entrance to the nest. The largest colony so far observed contained fourteen individuals in a single burrow.

Like those which inhabit other parts of the world, the males are larger than the females. It is difficult to determine the sex, for it is necessary to examine the nipples (three or four pairs) or external genitalia. The animal breeds twice a year. The first litter appears from the end of May to the beginning of June and

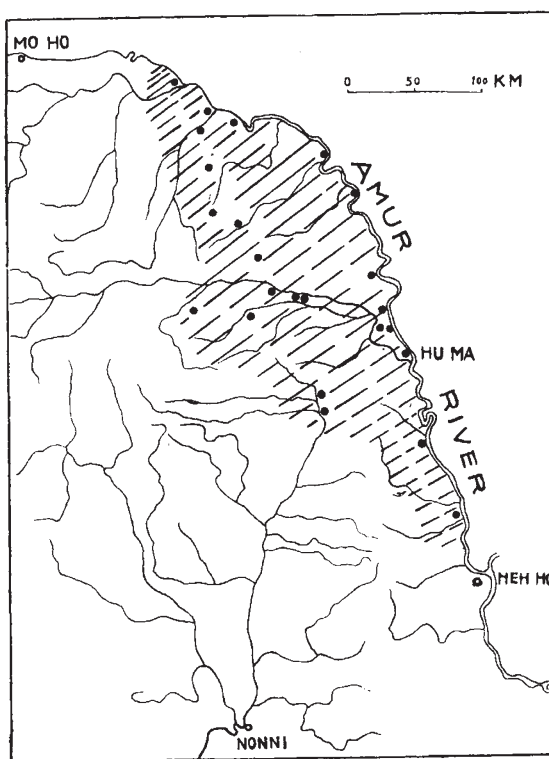


Fig. 1. The Amur region of north-eastern China. Dots indicate places of occurrence of the muskrat; shaded areas indicate their range

the second litter between July and August. The animal does not hibernate in winter, and is chiefly herbivorous. Aquatic plants are very rare during the coldest months, so the animal then lives mainly on fishes or other animals.

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¹ Shaw, T. H., and Chu, C., *Shen Wu Hseuh Tung Pao* (Biologia), **19** (1955).

² Shaw, T. H., and Chang, C., *Chinese J. Anim. Husbandry*, No. 2, 57 (1957).

Elephant Seals on the Antarctic Continent

THE elephant seal (*Mirounga leonina* (L.)) has not previously been recorded in any numbers away from its known breeding grounds. These are antarctic and subantarctic islands from the South Shetlands to Macquarie and the Campbell Islands, extending north to Tierra del Fuego and the Falklands. The southernmost known breeding ground is King George Island in the South Shetlands, in about 62° S. South of this, stragglers are fairly common off north Graham Land in 64° – 65° S.^{1,2}, and single individuals have been recorded in summer from Terre Adélie (66° 45' S.)³, Cape Denison (67° 0' S.)⁴, Scott Island (67° 24' S.)⁵, Cape Hallett (72° 25' S.)⁶ and McMurdo Sound (77° 40' S.)⁷. A young male was seen on March 24, 1954, at Mawson (67° 36' S.). There are also a few records of sightings in the pack-ice.