

and on a human volunteer. Rapidly spreading itching lesions were produced in both from which were recovered isolates identical with the H1 strain.

Hedgehogs were first introduced into the Dunedin district in 1885². Several further liberations were made in both islands of New Zealand, and these mammals have become very numerous in several areas. Their contact with man and his domestic animals may be greater than is generally realized, and there seems to be good evidence that the dermatophyte strains which they carry are transmissible to man. They appear to constitute a hitherto unrecognized source of human infections.

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BIOLOGY

A Pacific Salmon (*Oncorhynchus gorbuscha*) in Scottish Waters

ON July 16, 1960, in a salmon bagnet at Altens fishing station on the sea-coast near Aberdeen, a fish was caught which was recognized as unusual. It was sent to the Freshwater Fisheries Laboratory at Pitlochry and then to the British Museum (Natural History), where it was identified as *Oncorhynchus gorbuscha* (Walbaum)^{1,2}, the pink or humpback salmon, a species the natural distribution of which is along the Pacific coasts of North America and Asia from the Bering Straits to Peter the Great Bay and the Sacramento River.

This fish was 20½ in. in overall length with a standard length of about 450 mm., a depth of 135 mm., a width of 67.5 mm., and a weight of 4 lb. 2 oz. It is at once recognizable as distinct from either *Salmo salar* or *S. trutta* by the deeper body, more pointed snout and the presence of coarse oval black spots on the caudal fin; it differs from these and *S. gairdnerii* (the rainbow trout) in the higher number of rays in the anal fin (A 17 as against 9–12, rarely 13 in *Salmo*) and of gill-rakers (26 on the whole of the first arch as against 24 or fewer in *Salmo*).

The scales, which are more numerous than in other species of *Oncorhynchus*—we counted approximately 170–174 in the lateral line—agree very well in structure with those of *O. gorbuscha* figured by Gilbert³ and Davidson⁴, showing one winter band only and the inner circuli not crowded as in the typical freshwater parr-life of *Salmo*. The humpback's life-history is well known^{1,3,5}. It spawns in autumn (August–September in the River Amur). The eggs hatch in December, and the fry make their way to the sea as soon as they can swim, from April until June, at a length of 3.2–3.6 cm. They feed at first in water still brackish from the influence of the rivers (a phase consonant with the appearance of the first summer's growth of the scale) and then, at a length of 4–12 cm., move off to the open sea. Sexual maturity occurs at the end of the second year of life and no older fish have been caught in the spawning runs. Neither has any yearling fish been caught in fresh

waters. Marking experiments indicate a high percentage of returns to the natal stream, but some straying may occur if suitable rivers enter the sea in the neighbourhood of the natal stream⁴.

The Aberdeen fish, a male with enlarged testes, had the typical form and colouring of a 'clean' fish, with spots on the caudal fin only and none on the back, and without the kype and hump that develop at the spawning period. It is in the British Museum (Natural History).

We understand that, since 1956, the Russians have transferred very large numbers of Pacific salmon eggs, chiefly pink salmon, from Sakhalin Island north of Japan to the rivers of the Kola Peninsula. Up to the middle of September, they have had records of the return of some 75,000 fish to the rivers of the Kola Peninsula. There have also been reports of recaptures on the Norwegian coast, chiefly in the north, but extending as far south as Bergen, and in Iceland. Several thousand Pacific salmon have been caught on the Norwegian coast, though in Iceland the catches have been much smaller; probably less than fifty having been caught. It is, therefore, reasonable to assume that the pink salmon caught at Altens originated from one of the rivers of the Kola Peninsula.

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³ Gilbert, C. H., *Bull. U.S. Bur. Fish.*, **32** (1914).

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Interspecific Hybrids of *Tilapia*

WHITEHEAD's claim¹ to describe hybrids between *Tilapia nigra* and *T. zillii* in two waters in which both species had been introduced could be accepted only if supported by unequivocal evidence. His only evidence that *T. zillii* was one of the parents of the problematical fishes is that this was the only species other than *T. nigra* known to be introduced. We know enough of stocking accidents to place no reliance on this, especially when, as in this case, all the evidence points in another direction.

We have had the opportunity of studying Whitehead's fuller report, which he sent to one of us for criticism. From this we see that his statement¹ that "in most anatomical characters the hybrids resembled *T. nigra*" is true, but it would be better to say that these were characters of the section of the genus including *T. nigra* but not *T. zillii*. The divergences