It took several minutes to return to normal. (5) The phenomenon was confined to the zone through which the current had passed. In the immediate proximity, resistance was normal.

A localized fall of resistance, therefore, occurs in guinea pig skin following the passage of an electric current. The tissues appear to become a d.c. battery.

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Identity of Larval Redfish Populations in the North Atlantic

THE large redfish or ocean perch was of little importance to commercial fishing fleets in the North Atlantic until 1930, the total landings from all areas being below 20,000 metric tons per annum. Since then, however, American and Canadian fishermen have directed more attention to redfish, and after 1945 German, Icelandic and Russian fishing fleets deployed a large effort. The annual catch increased to 385,000 metric tons by 1955, since when it has been maintained at about this level. Redfish are caught off the coasts of North America between Cape Cod and Labrador, off Greenland and Iceland, and from areas in the north Norwegian and Barents Seas. There is a serious lack of information about the identity of the populations, the fecundity, and the growth-rate, all of which are essential for a proper understanding of the biology of the species.

The adults of the large redfish, *Sebastes marinus* (L.), are separated into *marinus* and *mentella* types. Both are ovo-viviparous, and the larvæ have been distinguished by the absence or presence of isolated melanophores ventrally at the root of the primordial caudal fin. All the young stages taken by the Hardy Continuous Plankton Recorder survey in areas south and south-west of Iceland were without sub-caudal melanophores and have been considered as the *marinus* type. They are found during the period May–July in every year[1], and during May their numbers average 45 millions (and range up to 700 millions in the centres of abundance) under each square mile, extending over a total area of about a quarter of a million square miles of ocean which is not fished by commercial vessels (Fig. 1).

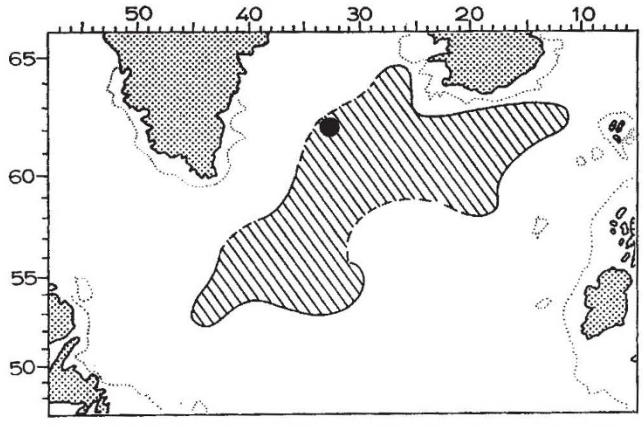

Fig. 1. Distribution of young *Sebastes* in May, based on sampling with plankton recorders during 1956–62. Broken lines indicate regions in which the sampling was insufficient to determine the precise boundary of distribution. The black circle shows the position of Ocean Weather Station *A*

The crew of the Dutch weathership *Cumulus* caught redfish by angling at Ocean Weather Station *A* (62° N., 33° W.) during May–June 1961. Experimental fishing trials were carried out with the help of British and Dutch weatherships occupying this station from April until September 1962, with the purpose of examining the parent stock producing the large larval concentrations regularly found each year in this and adjacent areas. Each ship was provided with a sea-rod and reel, 400 m of line, and three hooks fitted to metal lures (or spinners). A total of 120 fish were caught, weighed and measured: of these 30 specimens were preserved in formalin and returned to the laboratory. (This sample, although small, is believed to be the largest from this area which has been available for detailed study.) All these specimens were the *mentella* type, the majority being caught at 120–150 m depth. All the females (27) had 'spawned', but in some a few larvæ were retained. None of these larvæ had sub-caudal melanophores, and would therefore have been considered as *marinus* type if they had been caught in plankton samples.

These observations, along with preliminary results from some other recent investigations, cast doubts on the validity of the criteria which have been used to distinguish the larval stages of the different specific or subspecific groups of *Sebastes*. It is clear that more fundamental research is needed, on both adults and larvæ, before the separate stocks of this potentially valuable fish can be identified.

This work is being continued by weatherships of France, Holland, Norway and Britain, which have caught more than 400 specimens. The results show that adult redfish of the *mentella* type were present in this area (midway between Iceland and Greenland, over water more than 1,500 fathoms deep) in every month of the year. This is an unexpected result and one of great importance in assessing the possible extent of this oceanic fishery resource.

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[1] Henderson, G. T. D., *Bull. Mar. Ecol.*, **5**, 173 (1961).

MICROBIOLOGY

Formation of β-D-Fructofuranosyl-α-D-ribo-hexopyranoside-3-ulose by a *Micrococcus* sp.

SOME time ago we described the formation of β-D-fructofuranosyl-α-D-ribo-hexopyranoside-3-ulose ('ketsucrose') from sucrose by cultures of *Agrobacterium tumefaciens*[1]. Bernaerts and De Ley, who had previously reported that hexoside-3-uloses were produced by an organism tentatively classified as an *Alcaligenes* sp.[2], have recently confirmed our results by identifying their organism as *Agrobacterium tumefaciens*[3]. In addition, these authors state that the ability to produce such compounds as ketsucrose is limited to members of the genus *Agrobacterium*, and propose that this property be utilized as a diagnostic test for *A. tumefaciens* and *A. radiobacter*. We have now isolated a *Micrococcus* sp. from soil which converts sucrose to ketsucrose.

An agar medium containing inorganic salts and 5 per cent sucrose[1] was inoculated with an aqueous extract of soil, incubated at 28°, and the resulting colonies were purified. Each isolate, growing in the same aerated liquid medium, was tested daily for the possible presence of ketsucrose by spraying alkaline triphenyltetrazolium chloride solution[4] on a drop of the culture filtrate which had been previously dried on filter paper. Cultures that reduced the reagent immediately, producing a bright pink spot, were examined by paper chromatography in *n*-propanol/ethyl acetate/water (7 : 1 : 2). Ketsucrose runs in the leading edge of the sucrose band in this solvent system. The chromatographs were sprayed with the urea phosphate reagent of Wise *et al.*[5] and held at 100° C for 3–5 min, conditions under which ketsucrose reacts to give a bright