Maskell si sia apposto al vero, e che la sua *L. setifera* sia stata veramente la prima di questo genere raccolta nelle acque dolci.

La forma trovata da me nel Veronese (fig. 1, a, b) è piu grande di quella di Maskell, misurando questa μ 71, la mia μ 110; è però ad essa molto simile. La regione posteriore, irregolarmente rettangolare, porta due gruppi di setole; la regione anteriore, lunga, leggermente conica, e coperta de cilia corte e fitte, forma angolo retto con la regione posteriore, ed ha l'apertura orale ellissoide contornata da cilia lunghe e numerose. È molto contrattile, mobilissima, e cambia facilmente di forma.

Chiamerei questa specie, come la prima trovata in Europa, *L. europaea.*

Ne ho raccolti tre esemplari nuotanti liberamente nell' acqua: uno nel lago di Garda fra le alghe dei canneti di Peschiera; due nelle acque delle risaje di Gazzo Veronese (Ronchetrin) fra i detriti della *Utricularia neglecta*[2] pianta necrofaga che teneva sotto osservazione in piccoli acquarii nel mio laboratorio.

5. Do Salmon feed in Fresh Water? The Question as viewed from the Histological Characters of the Gut.

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The question as to whether salmon do or do not feed in rivers has for long occupied the attention of a number of investigators. In recent times the subject has been extensively dealt with by Professor Miescher-Reusch[1], and by a band of Edinburgh workers whose results have lately been published under the Editorship of Dr. Noël Paton[2]. The results of the former support the view that the Salmon, at least before spawning, does not feed during its sojourn in freshwater, while those of the latter appear to strongly confirm this idea. On the other hand, Professor W. C. McIntosh[3] and others have shown that salmon in many cases at least do feed in rivers. That such a view is the correct one, I am now pretty well convinced.

The evidence adduced in support of the former view is based on the following alleged facts[4]:

[2] Del genere *Utricularia* furono raccolte nel Veronese solamente tre specie da Pollini: *U. vulgaris, intermedia, minor*; la *neglecta* sarebbe nuova per la nostra provincia.

[1] Miescher-Reusch, Fischerei-Austellung zu Berlin. 1880.

[2] Report of Investigations on the Life History of Salmon. Fishery Board for Scotland. 1898.

[3] McIntosh, Notes on the Food and Parasites of *Salmo salar* of the Tay. Proc. Linn. Soc. Vol. VII. p. 145.

[4] Rep. Investigations Life History of Salmon. Fish. Board Scotland. p. 170—172.

1) When salmon leave the sea they have in their bodies a supply of nourishment not only sufficient to yield the material for the growth of ovaries and testes, but to afford an enormous supply of energy for the muscular work of ascending the stream.

2) During the stay of the fish in fresh water the material accumulated in the muscles steadely diminishes, and there is absolutely no indication that its loss is made good by fresh material taken as food.

3) The functionless condition of the whole gut, due to a desquamative catarrh of the mucous membrane.

4) The low digestive power of extracts of the mucous membrane of the stomach and intestine not only in upper-water fish but in fish approaching the river mouth, indicating that the salmon has practically ceased to feed before it makes for the estuary.

5) The greater abundance in upper-water fish of putrefactive organisms which are most readily destroyed by free acids. This would indicate in the upper-water fish the absence of the free acid which is formed in the stomach of fish during digestion, and which if present would destroy them.

6) The absence of food or undigested remnants of food in the stomach and intestine.

On a careful examination of these alleged facts, it will be seen that the evidence for the nonfeeding of salmon in rivers to a very large extent rests with (3). It seems to me that the whole question can be practically settled by a careful study of the digestive and absorptive surfaces of the gut and of the seasonable changes there observable. In the present paper then, I wish to give a brief account of the results of my investigations on the histological characters of the gut of the salmon in so far as they bear on the question at issue.

For histological work on the alimentary canal it is absolutely necessary to obtain the material in a perfectly fresh condition immediately after the capture of the fish. Every part of the gut to be examined must be opened up and placed at once in the fixing fluid, for I have found that post-mortem digestion occurs particularly in the pyloric appendages and intestine in from 30 to 45 minutes after death. To post-mortem digestion, as will be shown later, is due the existence in the pyloric appendages of the pultaceous, creamy-like substance refered to by Fritsch[5], Miescher-Reusch[6], Gulland[7] and others.

(Schluß folgt.)

[5] Ant. Fritsch, Der Elbelachs p. 96.

[6] Loc. cit.

[7] Gulland, Rep. Investig. Life Hist. of Salmon Fish. Board Scotland. 1898. p. 16, 17.