

des Schwanzstummels ist so deutlich innerhalb weniger Stunden nach dem Schwimmen im Vergleich zu nicht schwimmenden Tieren zu konstatieren, daß das Experiment meiner Ansicht nach ganz gut als Demonstrationsversuch für die funktionelle Anpassung zu verwenden ist. Ebenso die beschleunigte Regeneration der Schwanzlamelle, wozu allerdings eine etwas längere Zeit notwendig ist, die sich nach dem Zeitpunkt des Beginnes der Schwimmversuche richtet. Läßt man Tiere mit gut verheilten Schwanzstummeln erst 4 Wochen nach der Operation schwimmen, so dauert es etwa nur 3—5 Tage, bis eine deutliche kleine Schwanzlamelle vorhanden ist. Nimmt man dagegen frisch operierte Tiere mit eben notdürftig geheilter Wundfläche, so dauert es etwa 14 Tage, bis eine kleine Schwanzlamelle zu erkennen ist. Bei den Tieren, die nicht geschwommen haben, im übrigen aber wie die Schwimmtiere behandelt wurden, ist innerhalb dieser Zeit noch nichts von einer Schwanzlamelle zu erkennen. Gelegentlich eines andern Versuches in diesem Winter konnte ich feststellen, daß die Schwanzlamelle erst nach etwa 7 Wochen anfang sich zu bilden. — Die vorstehenden Versuche sollen noch in größerem Maßstabe fortgeführt und die speziellen Ergebnisse in einer größeren Arbeit zusammengefaßt werden.

11. *Sicista subtilis*, found in Norway in 1907 and 1908.

By R. Collett, Zoolog. Museum Christiania, Now.

eingeg. 5. März 1909.

In the summer of 1907, I received from a correspondent in Opdal, on the northern slope of the Dovre Mountains (in Latitude 62° 40' N.) a fresh specimen of *Sicista subtilis*, caught on the 26. August¹.

The species must be regarded as a remarkable and unexpected remnant of an immigration of animals and plants under the cold climate and peculiar natural conditions that characterized the period following the first great glacial Epoch (the interglacial period), generally known by the Steppe-Period in Europe. Of other such remains in Norway may be mentioned a tooth of a Mammoth, found (as an erratic stone) in Vaage, Gudbrandsdal, laying nearly in the same mountain district as that still inhabited by the *Sicista subtilis*.

In Sweden it is perhaps quite extinct, as no mention of the species there is known to have been made, except of a single specimen caught at the south point of the country in the first half of last century (Lands-crona, July, 1835).

As the find was one of interest, I have endeavoured to gather all

¹ The correspondent hat received traps and instructions relating to the collection of *Microtes* and other small Rodents for the Christiania Museum.

possible information regarding its appearance in the locality mentioned above; and during 1908 I have further received 3 specimens caught at the same place on the 31. July, the 25. August, and the 7. September.

The 4 specimens obtained up to the present have all been full-grown males, well developed, and with a total length of between 163 and 171 mm (including the tail). All the specimens are in the Christiania Museum.

The measurements of the specimens are follows:

	Total length	Body	Tail.	
1	163 mm	66 mm	97 mm	Sept. 7, 1908.
2	165 -	67 -	98 -	July 31, 1908.
3	171 -	74 -	97 -	Aug. 26, 1907.
4	171 -	72 -	99 -	Aug. 25, 1908.

The length of the skull of No. 2 was 20 mm.

The Norwegian form. The specimens from Opdal, when compared with specimens from Jutland and Hungary, exhibit no decided differences in colour and dentition.

In these Norwegian skulls (of full-grown specimens), the prae-maxillo-frontal suture extends a little beyond the posterior margin of the nasals; in the specimens from Jutland and the Carpathians (in the Christiania and Copenhagen Museums) this suture extends sometimes as far as, sometimes beyond, the posterior margin of the nasals.

The tail in the Norwegian specimens varies in length, but is always considerably longer than the head and body combined (in 2 specimens almost 1½ times, in the others about 1⅓ times).

The stripe on the back in the 4 Norwegian specimens begins on the forehead, where it widens out into a large, round spot, and then runs, sharply and without any lighter borders, down to the root of the tail.

The yellowish gray ground-colour of the upper surface passes without any decided colour-boundaries into the only very little lighter reddish gray of the under surface. On the sides the yellow longer hairs predominate, while on the back some of the hairs are yellow, some black.

All the specimens hitherto obtained have been caught in one of the branches of the Opdal, running north-west from the main valley into the mountain group, Trolldheim, (in the province of South Trondhjem).

The floor of the valley, which is at a height of about 600 metres above the sea, is narrow and enclosed by high mountains surmounted by snow-clad peaks.

The specimens were found at the farms during the summer months while hay-making was going on, and had their haunts in the small meadows that bordered on the uncultivated land which is here covered

with birch-trees and under-growth. Some of these meadows were at the bottom of the valley, and others a little way up the sloping mountain sides.

The species has been observed before in Opdal, but not on the whole in any great numbers.

In August, 1900, specimens were observed in a birch-wood on one of the farms, and again in July, 1906, near the same farm; but at that time my informant was unacquainted with the scientific value of the species, and kept them alone.

The species is also said to have been observed occasionally by other inhabitants of the valley.

Except in Opdal, it is not yet certainly known to exist in Norway, but it will probably prove to inhabit several of the adjoining subalpine valleys and lower mountain plateaus. For instance, in July, 1907 (a good breeding-year for several small rodents), a species that, from the description, must have been this, was several times observed and killed at Domaas, on the southern slope of the Dovre Mts.

Christiania, 18. December 1908.

12. Einiges zur Anatomie und Physiologie der Schwimmblase beim Aal und den Renken.

Von Dr. O. Haempel, Wien.

eingeg. 5. März 1909.

Von den vielen Publikationen über die Schwimmblase der Teleostier der neueren Zeit erregten besonders zwei¹ meine Aufmerksamkeit, da sie sich so ziemlich widersprechen. Den Streitpunkt bildet die Schwimmblase des Aales (*Anguilla vulgaris*) bzw. der Luftgang (Ductus pneumaticus) desselben. Jäger bestreitet nämlich, daß es Thilo »beim Aale zuwege brachte, durch das blinde Ende des Luftganges Luft in den Darm zu blasen«, und meint, wenn dies tatsächlich gelungen sei, es nur »auf die verloren gegangene Gewebselastizität nach dem Tode« zurückgeführt werden könne. Er stützt seinen Ausspruch auf Versuche mit zwei lebenden Aalen, die er der Dekompression ausgesetzt und hierauf beobachtet hatte, daß der Aal beim Sinken des Luftdruckes keine Luftblasen aus dem Maule löst, gleich den Cyprinoiden, vielmehr in gleicher Weise wie die Acanthopteren, bei denen der Ductus pneumaticus völlig obliteriert ist, auftreibt. Thilo hingegen behauptet, daß es ihm an 10 Aalen, und zwar gleich nach deren Tode, gelungen sei,

¹ Jäger, A., Die Physiologie der Schwimmblase der Fische. Biolog. Centralblatt 24. Bd. 1904. — Thilo, O., Die Luftwege der Schwimmblasen. Zool. Anz. Bd. 30. 1906.

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