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## On a venomous fly of Southern Africa

MM. W. Oswell & Arnaud

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on in large wooden boxes or cases, having a layer of gravel at the bottom 4 or 5 inches deep, in which the ova and milt, or impregnated ova, might be buried, and the cases filled with pure water, which might be kept constantly fresh by allowing a small stream to run into them. When the fry had grown sufficiently strong, they might be conveyed to any distance in tubs filled with water, which might be occasionally renewed, and having tops perforated with holes. On the subject of the distribution of the species of freshwater fishes, Mr. Hogg refers to the presence of trout and other fishes in mountain streams and alpine lakes, for which it seems difficult to account; but he suggests, that as the presence of unusual plants in similar circumstances is only to be accounted for by the seeds having been dropped by birds, the problem with regard to fishes might be naturally solved in an analogous manner, their fry having been conveyed to these distant localities by means of water-birds.

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#### MISCELLANEOUS.

*On a Venomous Fly of Southern Africa.* By MM. W. OSWELL  
and ARNAUD.

THIS fly, called by the natives *Tsetsé*, is the same that was found to the east of the Limpopo, and which infests the country of Sebitoani; it is fortunately confined to certain localities from which it never removes. The inhabitants lead their cattle within a certain distance of the places where it is found, and if they are compelled, in moving about, to cross those portions of the country infested by the insect, they choose for this purpose a moonlight night in the winter, because the insect does not bite during the nights of the cold season.

From what I have seen, I think that it only requires three or four flies to kill a large ox. We examined about a score of ours which had been bitten and died; they all presented the same appearances. On removing the skin, the muscles had a slimy aspect and appeared much altered. The stomach and intestines were healthy; the heart, the lungs, the liver, sometimes all at once, and always one or other of these organs, were affected. The heart especially attracted our attention; it was no longer a hard muscle, but a contracted and emaciated organ which might be crushed by the least pressure of its walls; it resembled flesh which had been soaked in water. The blood was diminished in quantity and altered in quality. The largest ox did not furnish more than twenty pints; it was thick and albuminous. The hands, when immersed in this blood, were not spotted by it. The poison appeared to spread in the blood and to change the rest of the organs through its intervention.

I believe that all domestic animals, except the goat, die of the bite of this insect; calves and other young animals are secure from it during the whole time that they are sucking; man and all wild animals are also proof against its venom.—*Comptes Rendus*, October 16, 1852, p. 560.

At the meeting of the "Académie des Sciences" on the 26th Oct., the following note from a M. Arnaud, who has travelled in Africa, was brought before the Academy:—

"From the inspection which I was able to make of the fly brought by Mr. Oswald, at the 'Société de Géographie,' it appeared to me that it was identical with that found in the Isle of Sennâr, between  $15^{\circ}$  and  $11^{\circ}$  N. latitude. Its repeated bites also kill the animals, which compels the keepers of herds, especially of oxen, to leave the country during the season in which it is most troublesome, that is to say, from January to May; they take refuge on the banks of the Nile, where this fly very rarely occurs.

"I have been bitten by one of these flies, and the wound resulting from its bite lasted more than four months with insupportable pain, which sometimes returns even now."—*Comptes Rendus*, Oct. 26, 1852, p. 603.

*Experimental Researches upon the Temperature of Reptiles, and on the modifications which it undergoes under various circumstances.*

By M. AUG. DUMÉRIl.

From these experiments it appears that frogs have a proper temperature, superior to that of the water they inhabit. When this water has a temperature of  $59^{\circ}$  to  $64^{\circ}$  F., the difference in their favour was in no case less than  $0.54^{\circ}$  F. or more than  $1.26^{\circ}$  F. But when transported into much cooler water, this difference became much greater; thus the temperature of the frogs remained at  $47.48^{\circ}$  F., when the water in which they were immersed was only at  $45.5^{\circ}$  F. The raniform Batrachia therefore display a certain power of resistance to cold. M. Duméril has observed that this power was maintained as long as the temperature of the water was kept above the freezing-point, more especially when the cooling was not sudden; but when the temperature of the surrounding medium was reduced below this point, the frogs became congealed; this, however, did not always cause the death of the animals submitted to experiment. Thus the author has several times been able to revivify frogs which were in a complete state of rigidity, and the internal temperature of which was fully  $1^{\circ}$  below the freezing-point, by placing them in contact, first with melting ice, and then with water becoming gradually less and less cold.

Serpents have a proper temperature, which scarcely exceeds that of the medium which they inhabit. But in order to place this fact beyond all chance of error, it is necessary only to observe these reptiles at a period when neither digestion nor the change of skin is going on; the latter producing a diminution of temperature varying from  $0.45^{\circ}$  to  $1.8^{\circ}$  F., the operation of digestion, on the other hand, augmenting the temperature from  $3.6^{\circ}$  to  $7.2^{\circ}$  F.

M. Duméril has also proved that serpents offer less resistance to increased heat than the frogs; this is owing to the scaly covering of the former, which almost entirely prevents the cutaneous evaporation which takes place with so much facility through the naked skin of the Batrachians.—*Comptes Rendus*, May 31, 1852, p. 837.