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R. E. Smiley
Grinnell College

W. R. Ingram
Grinnell College

E. Blagg
Grinnell College

The list of species with the number of specimens for each species follows.

Leng's Catalog Number	Name	No. of Specimens
13497	futulis	1370
13501	prunina	2
13503	crassissima	123
13506	inversa	123
13507	bipartita	4
13508	micans	31
13510	vehemens	23
13511	fusca	5234
13514	hornii	15
13515	fervida	14
13516	anxia	42
13517	drakei	15
13519	barda	2
13522	fraterna	134
13523	fosteri	1
13530	rugosa	569
13534	implicata	239
13535	balia	3
13538	hirticula	2568
13540	ilicis	12
13544	crenulata	6
13563	tristis	9
	Total	10539

This list adds two species (hornii and barda) not heretofore reported for Iowa and brings the total number of species reported for the state up to thirty-one. It is hoped to continue this study for a period of years with a view to a better determination of their life history in this region.

We wish to acknowledge with thanks the help of the County Agriculture Agents, teachers and students which made this large collection possible and to Robert J. Sim for doing the larger part of the separation and determination work.

Iowa Wesleyan College,
Mt. Pleasant, Iowa.

THE ORGANS OF THE PARIETAL FOSSA IN ELASMOBRANCHS

R. E. Smiley, W. R. Ingram, and E. Blagg

Davidson, in a paper on the musculature of Heptanchus maculatus (1918), mentions a small shield-shaped organ to be found in the parietal fossa, and in connection with it a pair of small muscles having their origin on the cranium and dorsal longitudinal muscles. He believes that these muscles constrict this sac-like organ.

Daniel, in his book on the elasmobranch fishes (1921), remarks that "upon removing the integument for dissection of the ear there is found in Heptanchus an apparatus which is stretched across the parietal pit and through which the endolymphatic ducts pass. This apparatus is held in place by muscles differentiated from the dorsal bundles. The apparatus consists essentially of two layers of membrane between which there is a fluid (which in preserved material coagulates and appears as a series of granules). This membrane evidently acts as a tympanum over the parietal fossa and consequently over the fenestrae which lead from the fossa and wind about the inner parts of the ear."

The parietal fossa is a deep pit in the dorsal part of the cranium just anterior to the occipital crest. In the bottom of this are the small openings of the endolymphatic ducts and the larger fenestrae. Each fenestra enters a well defined cavity within the ear capsule and called the tympanum. Daniel points out that Howes (1883) found the aperture of the fenestra in the skate Raia closed by a membrane which Daniel thinks is essentially the same as that described for Heptanchus. He believes that in the ray type with flattened head the membrane fits closely over the fenestrae, but that in Heptanchus the membrane overlies the deep pit of the parietal fossa. He further believes that the semi-fluid before mentioned might serve to transmit sound waves to the cavity below it and thus act something after the fashion of the tympanic membrane of the higher forms.

We find that the muscle, to which Davidson and Daniel refer, was observed as long ago as 1881 by Retzius. His figures of Acanthias vulgaris show such a small muscle, not connected with any membranous organ, but having its insertion on the endolymphatic sac. He calls it the "musculus ductus endolymphaticus." Luther (1909) also figures the muscle in Squatina attached to the endolymphatic sac.

At the suggestion of Professor H. W. Norris the writers investigated the structures found in the parietal fossa of Heptanchus, Mustelus, Triakis, Squatina, Squalus, Galeus, Urolophus, Rhinobatus and Pteroplatea. The material consisted of serial sections cut through the parietal fossa and ear capsule of advanced embryos and small adults. Wax models were made by the Born method of five of the forms studied: Mustelus, Heptanchus, Squatina, Rhinobatus and Urolophus.

In all the forms examined a pair of small muscles is found in the parietal fossa. Uniformly these muscles have their origin on

the cranium or the anterior trunk muscles, and are inserted on the endolymphatic sac, in the angle made as the latter abruptly turns ventrally into the ear capsule. In the skates the sac is small, compact and flattened; in the sharks it is more extended. Dr. Norris finds that in Platyrhinoidis this muscle of the parietal fossa is innervated by a twig from one of the anterior spinal nerves.

The exact function of the endolymphatic sac and its muscle is yet to be determined. We can hardly agree with Daniel in assigning the function of a tympanum to the structures in the parietal fossa. Nothing like Davidson's shield-shaped membrane could be found. It is most likely, as Dr. Norris has suggested, that the endolymphatic sac and its muscle have a function related to pressure adjustment and accommodation. In elasmobranchs the duct opens externally so that at unaccustomed external pressures the equilibriatory system may need adjustment. The pressure within the labyrinth should be maintained at a constant level. The sac with its convolutions and attached muscle would readily lend itself to constriction in this case. It may be also that the muscle aids in clearing the duct of an excess accumulation of lime crystals. In any event the final solution will require careful experimentation with living animals.

GRINNELL COLLEGE,
GRINNELL, IOWA.

HISTOPATHOLOGY OF THE THYROID OF THE GUINEA PIG IN EXPERIMENTAL SCURVY

KATHERINE R. DAY

Chronic scurvy was induced in guinea pigs by a diet of dried foods supplemented by 0.25 cc to 5 cc orange juice given daily per os by means of a pipette.

Animals of as nearly the same age and weight as possible were selected. The sexes were divided equally between control and experimental groups.

After a period of fifty-one days, the animals were decapitated, and the thyroids dissected out intact with the trachea. These were fixed in Zenker's fluid; serial sections made and stained with Delafield's haemotoxylin and Eosin.

The colloid in follicles of comparable areas from the two groups of animals was measured in two diameters and the number of follicles in the same areas counted. The results showed no significant difference in the amount of colloid.