difficult to be entered upon in a brief communication. The enterocoeles present no difficulty. The right anterior enterocoele has disappeared as such, but its pore persists in *Cephalodiscus* and in *Balanoglossus Kupfferi*. The left anterior enterocoele is the proboscis cavity, which retains its pore.

I may now revert to the question of the endostyle. The considerations here advanced render it probable that an adoral ciliated band, comparable to that of *Auricularia*, persists in some forms of *Tornaria*. Mr. Ritter's note on the discovery of a ventral ciliated (?) tract in the oesophagus of a *Tornaria* from the Pacific suggests to me that he has very probably come across the desired homologue of this adoral band. His preliminary description is, however, so incomplete that it is impossible to be certain upon the point at present. The general truth of the homologies which I have suggested seems to me to be so well substantiated that I should be far from surprised if Mr. Ritter should find, upon further examination, that the ciliated tract which he has discovered possesses the loop-like arrangement characteristic of the adoral band of *Auricularia*, of the corresponding structures in the Tunicata, and of the endostyle of the larval *Amphioxus*. I publish this note in the hope that he may be led to direct his attention towards the possible existence of such an arrangement; and also to the important theoretical point whether the approximated portions of the ciliated bands do actually in ontogeny contribute to the formation of the medullary plate which he describes. I am well aware that Morgan does not attribute any direct share in this formation to the ciliated bands; but his description is most significant and suggestive. It is possible that in *Tornaria*, as in *Auricularia*, the ciliated ridges are secondary concentrations of primitively broader ciliated bands, and that Morgan's »collar-folds« are the ontogenetic expression of these hypothetical tracts.

Plymouth, Febr. 2nd 1894.

6. Cambarids from Florida, a new blind species.

By Dr. Einar Lönnberg, Upsala.

eingeg. 14. Februar 1894.

During my sojourn in Florida 1892—93 I had opportunity to collect three species of *Cambarus*. Two of them are well known and described forms: *Cambarus fallax* Hagen and *Cambarus Alleni* Faxon both of which I procured from several different places. But the third is quite different. It is a blind species from a subterranean water. Digging a well in Orange County a man at a depth of about 30 feet

struck a subterranean rivulet and with the water from the same were brougth up in the daylight several colorless and blind crayfishes. I obtained two of them (♂) and have now compared them with the description of other blind Cambari from the United States. Heretofore two good species of that kind are known, *Cambarus pellucidus* Tellkampf and *Cambarus hamulatus* Cope and Packard. If we now compare my new specimens from Florida with these, we will find a great difference. *Cambarus hamulatus* is at once excluded as it belongs to another group of species (according to Faxon) with the third segment of only the third pair of legs hooked in the male and the first pair of abdominal appendages of the male thick, terminated by two recurved teeth etc.[1]. But there are still more differences, for instance rostrum has strong, well developed lateral spines and there is a large spine on each side just behind the cervical groove etc. but we need no more characters here. It was not to be suspected either that a form from the Nickasack cave in Tennessee even should be found in Florida. My Florida species is then more related to *Cambarus pellucidus*. It belongs in fact to the same group of species with the third segment of third and fourth pair of legs hooked, but there is a great difference here too. In the Florida form the rostrum is much shorter, broader and more concave even than in the variety of *C. pellucidus*, which Cope described under the name *Oreonectes inermis*[2] from the Wyandotte Cave, Indiana. The apical point of the rostrum is short and blunt, on the sides are only slight angles nearer the tip, no spines as in *C. pellucidus*. The antennal lamellae are much broader and their spine is very small. On the carapax there are no spines at all of any kind (as in *C. pellucidus* even the form *inermis*) but only the areola and rostrum are smooth. As well the sides of the head as the branchial region are covered with granules or small tubercles and in this respect different from *C. pellucidus* too. Terminal segment of telson shorter and broader and less rounded. Opposed margins of fingers straight, unidentate. Chelae subcylindrical granulated. Of course there are other characters too, but as I hope soon to be able to publish an illustrated paper upon this subject with full description, I think this already can be enough to show that the mentioned blind crayfish from Florida is a new and well distinguished species and the third blind *Cambarus* of the United States. It is very interesting to have a species of this kind in Florida and it could nearly a priori be foreseen that it could not be identic with any of the northern forms from Indiana,

[1] Faxon, Revision of the Astacidae. Mem. Mus. Comp. Zool., Harv. Coll. Cambridge, Mass. 1885.

[2] Amer. Naturalist. 1872.

Kentucky or Tennessee, as there can be no cummunication sub terra between those places and even the eyed forms are different. Later on I shall speek a little about the geological surroundings of that subterranean water, where this new form was found. Now I only want to have the species recorded and I propose the name *Cambarus acherontis*.

Febr. 9, 1894.

7. Sur la signification de l'endosternite des Arachnides. II.

Par W. Schimkéwitsch, St. Pétersbourg.

eingeg. 19. Februar 1894.

Avant peu M. Bernard a publié une note dans laquelle il cherche à prouver l'homologie des apodèmes du *Galeodes* et de l'endosternite des autres Arachnides. Il existe vraiement une certaine ressemblance de position de ces organes, mais il y a aussi des différences entre eux.

L'endosternite des Arachnides est un organe impair et sa structure histologique est toute particulière. Les apodèmes du *Galeodes* prennent naissance du tégument entre la 1re et 2me paires de pattes et se touchent par leurs bouts postérieurs derrière le ganglion cephalique, mais ils ne fusionnent jamais. Ils se composent d'une couche interne de chitine, et d'une couche externe épitéliale. On observe chez le *Galeodes* entre la 2me et 3me paires de pattes une autre paire d'apodèmes, peu développés et situés en arrière des stigmes.

Il suffit de cuire dans une solution de Kali caustique la partie thoracale du corps de l'*Androctonus bicolor* pour se persuader qu'outre la paire d'apodèmes qui partent de la paroi du corps entre les chelicères et la lèvre supérieure il en existe encore deux l'une entre la 1re et 2me paire de pattes, l'autre entre la 2me et la 3me. Une série de coupes transversales d'un jeune scorpion montre que les apodèmes qui partent de la paroi du corps entre la 1re et 2me paires de pattes, sont situés des deux côté du ganglion céphalique et que leur paroi épitéliale, qui ne secrète plus de chitine, peut être pour suivie jusqu'au bord postérieur de ce ganglion. Il est évident que les apodèmes du *Galeodes* sont entièrement représentés par ceux du scorpion, mais ils sont moins développés chez ce dernier et ne se touchent point derrière le ganglion céphalique.

On observe quelque chose de tout à fait analogue à ce que nous voyons chez le *Galeodes*, chez l'*Astacus* entre les Crustacés. Les apodèmes thoracaux de la première paire convergent derrière le ganglion céphalique et présentent à leurs bouts intérieurs un systéme compliqué de plis. Les plis de l'un des apodèmes pénètrent dans