

While fully recognising the importance of Graff's observations for our own interpretation of the Nemertean proboscis, and the genetic relation of this organ to that of the Rhabdocœles (not direct but collateral), I must as emphatically reject the proposed derivation of the proboscidian sheath advocated by Salensky.

We must, indeed, represent to ourselves the gradual evolution of the proboscis as that of an epiblastic organ reaching further and further inwards in successive generations, and strengthened and completed by a mesoblastic musculature; and outside of this the free and independent development out of other mesoblastic elements (primarily belonging to the body-wall) of the sheath. It has been already noticed elsewhere (XIV, XV), that if these mesoblastic structures could be traced down to amœboid mesoblast cells derived *in loco* out of the subjacent hypoblast, an ontogenetic homology between the tissues constituting the proboscidian sheath and those forming the notochord of Vertebrates would be established.

Returning to the proboscidian sheath of the Schizonemertea, we find it to consist of an outer layer of circular fibres and an inner one of longitudinal (Pl. X. fig. 8, *m Prs*; Pl. XV. fig. 1). The former sometimes, when the sheath is thick and contracted, shows a wavy line. Radial fibres, piercing the two fibrous layers, insert themselves against the inner epithelium, which covers the whole inner surface, looking towards the cavity of the proboscidian sheath. Between this epithelium and the muscular layers there is a broad band of transparent basement tissue (Pl. XV. fig. 1, *b*) following the numerous longitudinal folds of the epithelium just mentioned. These folds disappear when the proboscidian sheath is in distension (Pl. X. fig. 8), a phase that may repeatedly be noticed, even without any extrusion of the proboscis, *e.g.*, as a consequence of complicated coilings of the proboscis inside its sheath. It is easily understood that during such distension the thickness of the subepithelial homogeneous basement layer and of the muscular layers is considerably reduced. A maximum degree of distension is figured on Pl. X. fig. 9, where the epithelium was no longer separately visible, and even the œsophageal epithelium has been flattened out, together with the proboscidian-sheath wall.

As will be seen from Pl. XV. fig. 1, we find outside of the outer circular layer of the sheath the gelatinous body-parenchyma, a thin layer of this even separating the proboscidian sheath from the longitudinal muscular layer α , in the midst of which we notice the true proboscidian-sheath-nerve (*pr.sn*). In addition, I think it is not unimportant to remark, that just below this layer of longitudinal fibres, there are strands of circular fibres which do not apparently belong to the proboscidian sheath, and which, after having been closely applied against the dorsal musculature in the middle line of the back, radiate amongst the parenchyma and the intestinal cœca. It is these fibres (and perhaps in addition to them the circular layer of the sheath itself) which may possibly be looked upon as representative of the layer δ in the Carinellidæ (*cf.* Pl. XI.), and which there takes such a conspicuous part in the dorsal delimitation of the proboscidian sheath.