

DESCRIPTION OF NEW FACIAL MUSCLES IN ANURA, WITH NEW OBSERVATIONS
ON THE NASAL MUSCLES OF SALAMANDRIDAE.

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[Abstract.]

The results of this investigation are presented under three sub-headings:

1. New observations on the nasal muscles of the salamanders. These muscles, which were described by the writer in the *Archiv für Anatomie und Physiologie*, 1896, consist in some cases of two muscles only (*a M. dilatator naris* and *a M. constrictor naris*). In other forms a third muscle (*M. dilatator naris accessorius*) is also present. These are smooth muscles, which arise wholly, or in large part, from the cartilaginous nasal capsule, or more definitely, from the margins of the fenestra rostralis.

The relation of the nasal muscles to the external nasal gland renders it highly probable that the contractions of the former produce a discharge of the glandular secretion upon the margin of the external nasal opening. The secure closing of the opening is thus facilitated.

Study of the development of the nasal muscles of the salamander demonstrates the fact that these muscles arise *in situ* in the mesenchyma. There is no migration similar to that of the striated facial muscles of higher vertebrates.

2. A description of new nasal muscles in *Rana*. Comparison of the frog and salamander shows that the former possesses a *M. dilatator naris* and also a second muscle, probably homologous with the *M. constrictor naris*. Both of these muscles, however, are degenerate in *Rana* and they have also undergone a change of function, so that they play only a very subordinate part in the closing of the external naris.

The development of these nasal muscles agrees with that of the nasal muscles of the salamander.

3. Description of a new muscle in the upper lip of *Anura*. This muscle, which I name *Musculus labialis superior*, lies in the soft overhanging upper lip, and has been observed in *Rana*, *Bombinator*, *Hyla*, *Bufo* and *Alytes*.

The *M. labialis superior* is composed of smooth fibres.