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## The Myelencephalic Gland of *Lepidosteus* (osseus and platostomus) and Its Relationship to the Semicircular Canals

Carrie C. Gillaspy  
*State University of Iowa*

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THE MYELENCEPHALIC GLAND OF LEPIDOSTEUS  
(OSSEUS AND PLATOSTOMUS) AND ITS RELATION-  
SHIP TO THE SEMICIRCULAR CANALS

CARRIE C. GILLASPY

The myelencephalic gland is tri-lobed (Fig. 1). The median lobe is wider than any other division of the brain and the width from tip to tip of the lateral lobes is almost as wide again as the median lobe.

The median lobe is roughly hexagonal. Its anterior end reaches a height equal to that of the cerebellum, while the posterior part tapers ventrally to meet the medulla oblongata (Fig. 1). Superficially, the dorsal surface of the median lobe is divided into equal parts by a longitudinal groove, which gradually disappears as it reaches the most anterior part of the lobe.

The lateral lobe which arise from the antero lateral angle of the median lobe is constant in size and shape in each species. In *Lepidosteus platostomus*, it is large and nearly oval, while in *Lepidosteus osseus*, the lobe is more narrow and tapers to a point anteriorly. The lateral lobe is completely embedded in the cartilage of the ear capsule (Fig. 2). The semicircular canals of the ear surround the lobe, with the anterior canal arching over the stalk of the lobe. It seems that this point has been overlooked by all previous workers.

The gland is highly developed dorsally but is developed only slightly on the ventral side of the medulla. The lateral side of the gland tapers ventrally sending a very thin narrow arm, as it were, around the medulla to meet its fellow of the opposite side (Fig. 2).

DEPARTMENT OF ZOOLOGY,  
STATE UNIVERSITY OF IOWA,  
IOWA CITY, IOWA.

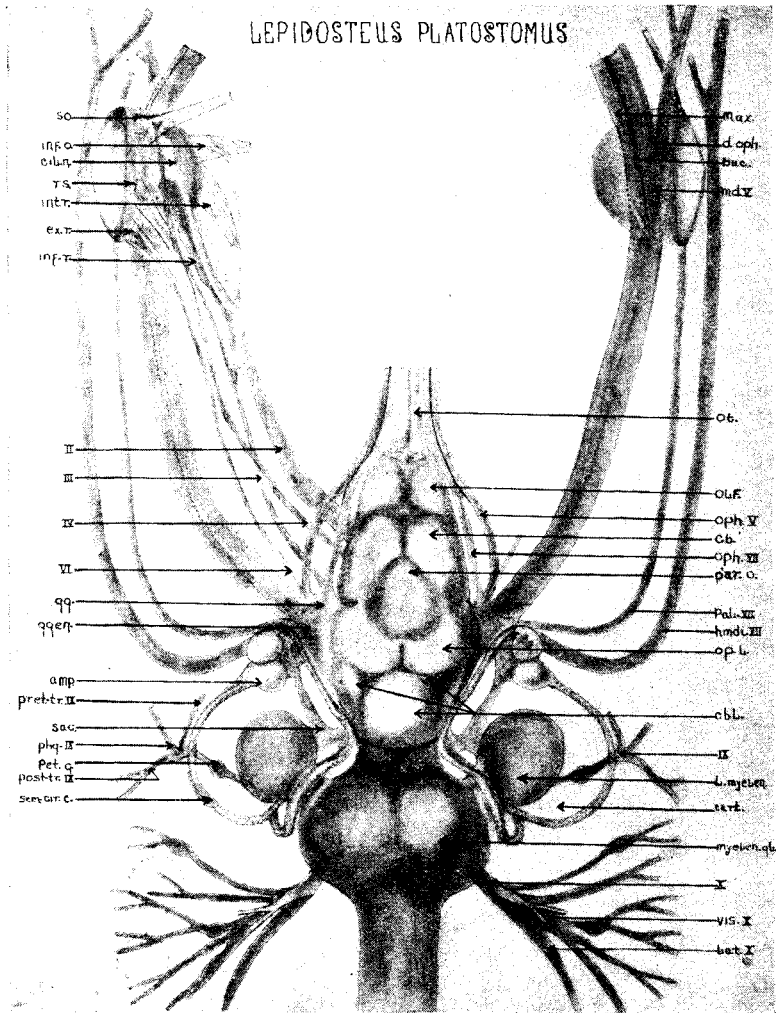


Fig. 1. Dorsal view of the brain of *Lepidosteus platostomus*, 60 cm. in length. Note that the semicircular canal arches over the stalk of the lateral lobe of the myelencephalic gland. x10

ABBREVIATIONS

amp.....	ampulli	olf.....	olfactory lobe
bus.....	buccal	oph. V.....	ophthalmic 5
cart.....	cartilage	op. I.....	optic lobe
cb.....	cerebrum	oph. VII.....	ophthalmic 7
cbl.....	cerebellum	ot.....	optic tract
cil. n.....	ciliary nerve	par. o.....	parietal organ
d. oph.....	deep ophthalmic	pal. VII.....	palatine 7
ex. r.....	external rectus	pet. g.....	petrosal ganglion
IV.....	trochlear nerve	phg. IX.....	pharyngeal
gg.....	gascerian ganglion	post. tr. IX.....	post-trematic
ggen.....	geniculate ganglion	pret. tr. IX.....	pretrematic
hmdi. VII.....	hyomandibular 7	rs.....	rectus superior
inf. o.....	inferior oblique	sac.....	sacculus vasculosa
inf. r.....	inferior rectus	II.....	optic nerve
int. r.....	internal rectus	sem. cir. c.....	semicircular canal
lat. X.....	lateral branch	VI.....	abducens nerve
max.....	maxillary nerve	so.....	superior oblique
mid. V.....	mandibular 5	III.....	mandibular nerve
myelen. gl.....	myelencephalon gland	X.....	oculomotor nerve
XI.....	glossopharyngeal	vis. X.....	Vagus nerve
			visceral branch

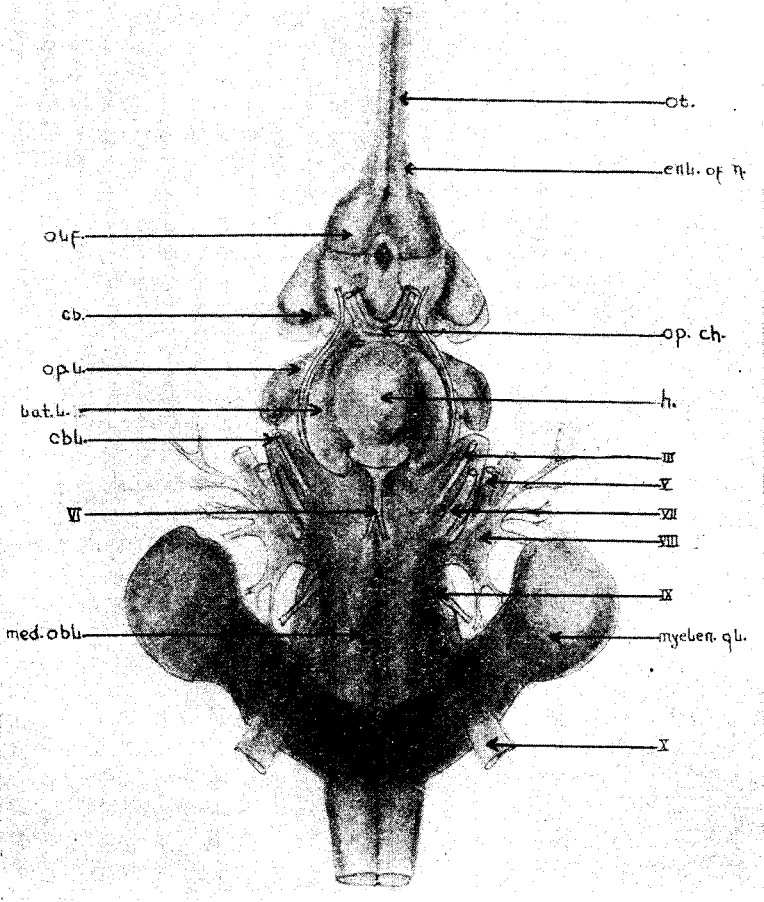


Fig. 2. Ventral view of the brain of *Lepidosteus platostomus*, 60 cm. length, with the saccus vasculosa removed to show the relation of the sixth nerve to the hypophysis x10. Note that the sixth nerve passes under the posterior part of the inferior lobe, emerges near the anterior portion of the lobe and lies just lateral to the optic nerve as it passes out of the cranial cavity. Note the thin narrow part of the myelencephalic gland

ABBREVIATIONS

cb.....	cerebrum	IX.....	glossopharyngeal nerve
cbl.....	cerebellum	olf.....	olfactory lobe
VII.....	facial	op. ch.....	optic chiasma
enl. of n.....	enlargement of olfactory nerve	op. l.....	optic lobe
V.....	trigeminal nerve	ot.....	olfactory tract
h.....	hypophysis	VII.....	facial nerve
med. obl.....	medulla oblongata	X.....	vagus nerve
lat. l.....	lateral or inferior lobe	III.....	oculomotor nerve
myelen. gl.....	myelencephalon gland		

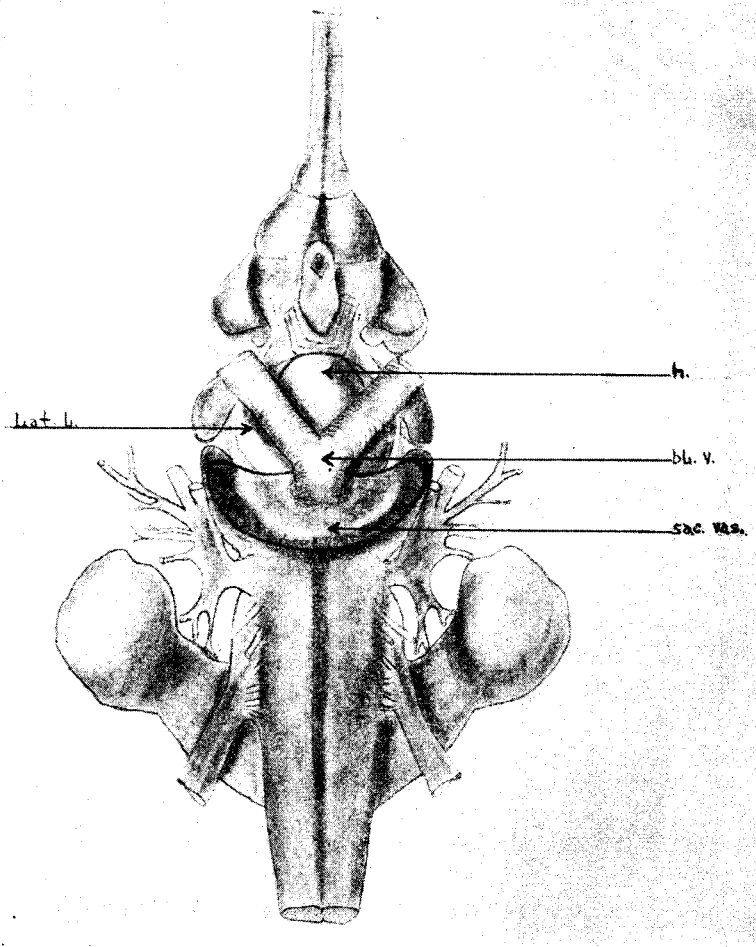


Fig. 3. Ventral view of the brain of *Lepidosteus platostomus*, 60 cm. length, with the ventral part of the myelencephalon gland removed. The saccus vasculosa and the large blood vessel that emerges from its ventral surface, are illustrated here. x10

ABBREVIATIONS

- |         |              |               |                          |
|---------|--------------|---------------|--------------------------|
| bl..... | blood vessel | lat. l.....   | lateral or inferior lobe |
| h.....  | hypophysis   | sac. vas..... | saccus vasculosa         |