

Examples	Location	Extension	Size in μ
Glyphoglossus	As a patch below the antorbital cartilage invested by the pterygoid.	Commences before the eye and ends before the anterior limit of the eye.	230
Microhyla	Between the pterygoid and the maxillary.	Commences at a level with the median vertical axis of the eye and extends posteriorly to it. The duct opens well in front of the angle of the mouth.	270
Kaloula	do.	do.	500
Cacopus	Between the pterygoid and the maxillary with the mandible below.	Commences at the anterior extremity of the eye and opens behind the angle of the mouth.	880
Rhacophorus	do.	Commences at the anterior margin of the eye and the duct is seen in the region of the annulus tympanicus, but opens in front of the angle of the mouth.	1060

References.

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² Jolly, *J. Compt. Rend., Biol.*, **71**, 200, 1919.
³ Narayan Rao, C. R., and Ramanna, B. S., *Proc. Zool. Soc.*, Part 4, 1445, 1925.
⁴ Narayan Rao, C. R., *Journ. Mys. Uni.*, **4**, No. 1, 1930.

- ⁵ De Villiers, C. G. S., *Anat. Anz.*, **71**, 331, 1931.
⁶ *Ibid.*, *Anat. Anz.*, **72**, 164, 1931.
⁷ Fuchs, H., *Nachr. v. d. Ges. der Wis. Zu. Gott.*, *Fachgruppe*, **6**, 131, 1931.
⁸ Ramaswami, L. S., *Journ. Mys. Uni.*, **6**, No. 1, 1932.
⁹ De Villiers, C. G. S., *Anat. Anz.*, **75**, 257, 1933.

Physical Nature of the Nerve Impulse.*

By Prof. A. V. Hill, O.B.E., F.R.S.

IN his Friday evening discourse delivered at the Royal Institution on 10th February 1933, Prof. A. V. Hill has discussed the nature of the nerve impulse, a subject which has engaged the attention of physiologists and which has given rise to much speculation. According to Prof. Hill, "the nerve impulse is an event, a wave, a propagated disturbance, not a substance or a form of energy. It is transmitted along a thread of protoplasm which in medullated nerve is surrounded by protecting or 'insulating' sheath. Its passage can be detected in several ways: (a) by its physiological effect on the organ to which it runs, (b) by the electric change which accompanies its transmission, (c) by the production of heat, and (d) by a consumption of oxygen and liberation of carbondioxide." The properties of the nerve impulse are discussed giving the methods of recording the variations that are

brought about during the event. Under other effects of oxygen, the lecturer describes the result of the action of certain drugs like veratrine and curare.

The strength, duration, the manner in which excitation by an electric current occurs and the nature of the propagated disturbance are discussed. The factors which determine the excitation time are noted. The difference in the behaviour of different fibres or of the same fibre under different conditions which is due to the alteration in the electrical resistance is explained by the probable specific solubility in the lipoidal substance of the nerve sheath under the influence of potassium ions.

The account of the mito-genetic radiation in nerve on which the Russian school is working is indeed very interesting, if not exciting and if confirmed will gain very great social and industrial importance.

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