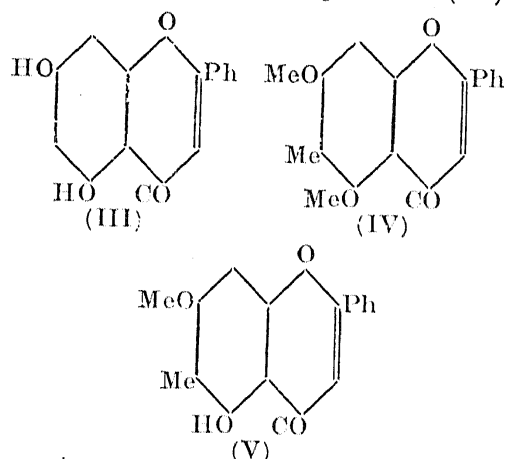


The methylation of chrysin (III) in acetone solution with methyl sulphate and alkali yielded a substance whose melting point was different from that of the known dimethyl ether.* The analysis indicated a C-methyl chrysin dimethyl ether (IV) and



treatment with aluminium chloride led to a monomethyl ether (V), closely resembling tecto-chrysin in its colour reactions.

K. VENKATARAMAN.
G. K. BHARADWAJ.

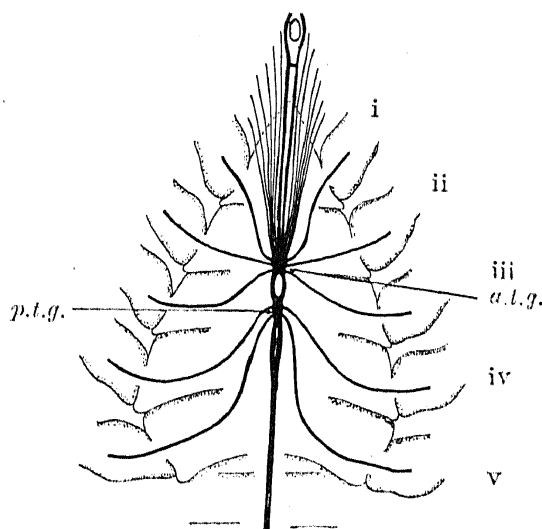
Technical Chemistry Laboratories,
University of the Punjab,
Forman Christian College,
Lahore,
July 6, 1933.

The Nervous System of *Panulirus*.

THE thoracic part of the nervous system in the Bombay lobster *Panulirus* has been described in the text books as a single large ganglion formed by the fusion of eleven pairs of ganglia with an opening in the centre for the sternal artery to pass through. It is thus figured as a ganglionic ring sending out eleven pairs of nerves all round.

In April last Dr. C. J. George wrote to me from Poona and asked me to see if the ganglionic mass in the thorax was not really two distinct masses. From some dissections which he had occasion to see at Poona he suspected that the description in the text books was not correct. I dissected six specimens collected from Bombay and found that there were two distinct masses of fused ganglia connected together by the double nerve cord, one situated anterior and the other posterior to the descending sternal artery. The

anterior thoracic mass gives rise to nine pairs of nerves and is therefore formed of nine pairs of united ganglia, three of the



Panulirus.—Nervous System.
a.t.g. Anterior thoracic ganglion.
p.t.g. Posterior thoracic ganglion.
i-v. Walking legs.

head and six of the thorax, while the posterior thoracic ganglionic mass gives rise to two pairs of nerves and is therefore made up of two pairs of thoracic ganglia. While the individual ganglia could be distinguished in the posterior mass such a clear demarcation is not seen in the anterior mass. A sketch of the system appended illustrates the structure.

M. J. PRESSWALLA.

Department of Biology,
Wilson College,
Bombay,
June 26, 1933.

References :

- Powell and Kohiyar, "Lessons in Practical Biology for Indian Students," pp. 129-131 (1926).
Yeolekar and Samarth, "Panulirus or the Spiny Lobster of Bombay," p. 30 (1926).
Mullan, "Animal Types," p. 112 (1929).
Gideon, "An Introduction to Zoology," p. 43 (1930).

Notes on *Ficus indica* Linn., and Closely allied American Species—*Ficus laurifolia* Hort. et. Lam., and *Ficus anthelmintica* Martius.

Ficus glabrata HB & K., as noted in *Nov. Gen. et Sp.* II. 47, is a synonym of *Ficus anthelmintica* Martius. Miquel in Hooker's *Lon. Jour. of Botany* (1, 66, 1848) described

*Tasaki, *Acta Phytochim.*, 2, 119, 1925.

it as *Pharmacosycea anthelmintica*, growing as a fine large tree in the primeval forests of the province of Paraensis et Rio Negro in Brazil. Martius mentions about the vermicial property of the latex of this species. *Ficus laurifolia* Hort., as noted in the *Dict. Ency. Metho. Bot.* Lamarck, (2, 495, 1790) is an American species and is very much allied to *Ficus indica* Linn., which is distributed, as noted in *Flora of British India* (5, 506, 1890) in Burma, Perak, Singapore, Andamans and Malay Archipelago. Kurz in his *Forest Flora of British Burma* (2, 442, 1877) reports frequent occurrence of *Ficus indica* in the forests from Martaban to Tenasserim. The writer during his recent explorations in these regions confirms Kurz's statement. It extends, as King remarks, up to Philippines. C. E. Parkinson mentions in his *A Forest Flora of the Andaman Islands*, p. 251, 1923, that *Ficus indica* Linn. is "at first epiphytic, often on Padauk or on *Mimusops littoralis*, and eventually forming an independent stem, often of enormous size". When the fruit is ripe in July and August, the tree becomes "the rendezvous of pigeons, minahs and birds of many other kinds".

As regards the systematic position of the two species, *Ficus anthelmintica*, as far as the descriptions go, may be put under the section II as a tree—Urostigma characterised by ♂ and ♀ gall flowers, all in one receptacle (monœcious) borne at the axils of leaves in pairs or rarely solitary with alternate, entire coriaceous or sub-coriaceous leaves. *Ficus indica* and *F. laurifolia* are also under the same section. Lamarck considers *F. laurifolia* as the next species to *F. indica*. None of these species appears to fit in any one of the other six sections of the genus *Ficus*, which is divided into seven broad sections of which Urostigma is the largest. The figures of *F. anthelmintica* and *F. indica* agree quite well. *Ficus laurifolia* again, as noted by Lamarck, is the nearest one to *F. indica* to which, as mentioned by Linneans and quoted by Hooker, includes numerous forms of the plants.

Thus, as far as the literature is concerned, taking into special consideration the monograph on the Indo-Malayan and Chinese *Ficus* by Sir G. King,* I am of

*George King, "The species of *Ficus* of the Indo-Malayan and Chinese Countries", *Annals of the Royal Botanic Garden, Calcutta*, Vol. I (1888).

opinion that *Ficus indica* Linn. may be considered as the closest species to those of *F. laurifolia* and *F. anthelmintica*. David Prain in his *Bengal Plants* (2, 979, 1903) considers Roxburgh's *Ficus indica* Amoen (*Flora Indica*, 3, 539, 1874) a synonym of *Ficus Bengalensis* Linn. The vermicial properties of the latex of *F. anthelmintica* indicate that *Ficus indica* may have similar properties. *F. indica* is allied to this species and it may be worth investigating the latex of the Indian species of *F. indica* Linn., or other allied *Ficus* species. The medicinal properties of the juice of *F. indica* are already recognized. "The genus *Ficus* yields a number of economic products. Many species possess a milky juice containing caoutchouc, as *F. elastica* Roxb., of Sumatra, etc. Some of the juices are employed externally as well as internally, as that of *F. indica* L. Some possess anthelmintic properties, as *F. anthelmintica* Mart. Some yield gum lac or shellac as a result of the puncture of an insect, as *F. religiosa* L., *F. lacifera* Roxb.; and some are esteemed for their fruits, as *F. carica* L., *F. religiosa* L., etc."† *Ficus indica* Linn. is available in the Royal Botanic Garden, Calcutta, and Botanic Gardens, Singapore.

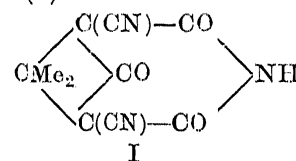
K. BISWAS.

Herbarium,
Royal Botanic Garden,
Calcutta,
July 12, 1933.

Experiments on the Synthesis of Pinene : Synthesis of *Cis*- and *Trans*-ketonorpnic Acids.

WORK has been in progress in this department for some time past to obtain pinene synthetically. An intermediate product of very great interest, *viz.*, ketonorpnic acid, has now been obtained, which should facilitate the synthesis of pinene.

The sodium derivative of Guareschi imide reacts with carbonyl bromide in the cold to yield, among other products, a satisfactory yield of $\alpha\gamma$ -dicyano- $\beta\beta$ -dimethyl- $\alpha\gamma$ -carbo-glutarimide (I)



†*The Dispensatory of the United States of America*, p. 1394 (1908).