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A CHROMATOGRAPHIC STUDY OF THE AMINO ACIDS (AND SUGARS) OF HEALTHY AND DISEASED LEAVES OF *ACALYPHA INDICA*

AN attempt has been made to study chromatographically the changes in the amino acid as well as the sugar content of the leaves of *Acalypha indica* (a common weed) due to the yellow mosaic condition of the leaves. The authors observed that the plants show a 'mosaic' pattern in the top leaves whereas the leaves below were quite green and healthy.

Various methods[1,3] of circular paper chromatography were tried. The best results were obtained by making use of the modification made by Ranjan *et al.*[2] A circular piece of Whatman filter-paper No. 1, diameter 27 cm. having 12 equal sectors separated by 12 radial cuts, was used for the purpose. Drops of known volume (0·002 ml.) of both the water extract as well as the acid-hydrolysate were kept at the positions located for the purpose. Index solutions were kept at six different places (A, B, F, H, I and J) to facilitate the identification of the bands.

The chromatogram was run with butanol-acetic acid-water (4 : 1 : 5) with a single paper wick in the centre for 7 hours. It was then dried at room temperature (25° C.) and sprayed with 0·1% ninhydrin solution in acetone.

The hydrolysate both of the healthy and mosaic leaves showed the presence of leucine and isoleucine (Band I), valine and methionine (Band II), tyrosine (III), alanine (IV), glutamic acid and threonine (V), glycine and aspartic acid (VI), arginine (VII), histidine and lysine (VIII), cystine (IX), but absence of serine. The water extract in both cases showed the existence of only tyrosine (I), glutamic acid and threonine (II), serine (III), and arginine (IV), but the bands were more intense with the 'mosaic' leaves.

The content of the free amino acids increased in the case of the 'mosaic' leaves. A separate study of sugars by the same method and using aniline-hydrogen phthalate as spraying reagent showed that the sugar content decreased in the case of the 'mosaic' leaves.

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EXTERNAL MORPHOLOGY OF THE SOLDIER OF *ODONTOTERMES OBESUS* (RAMBUR)

WITH a view to study the detailed morphology of the higher Indian termites, of which none has so far been worked out, *Odontotermes obesus* (Rambur) (Isoptera, family Termitidæ) was selected. The external morphology of the soldier caste has been worked out in detail.

The head is of the prognathous type. Some of the cranial sutures present in primitive insects are wanting here. The principal areas of the cranium are the vertex, epicranial region, frons, clypeus, genæ and mandibularia dorsally, and the occiput, postocciput, postgenæ and postmentum ventrally. The tentorium consists of the main body or corporotentorium and two pairs of tentorial arms, the anterior and the posterior.

The antennæ are usually with 16-17 segments, rarely with 15. In some colonies 16-segmented forms, and in others 17-segmented forms, predominate. Many individuals show asymmetry in the number of antennal segments in the right and left antennæ, but the difference is never more than one.

The mandibles are sharp and sabre-shaped. The left mandible bears a small tooth which is generally absent in the right one. The cervix or neck is provided with two pairs of cervical sclerites, an anterior and a posterior one.

The thorax is well developed, especially the pronotum. There are two pairs of thoracic spiracles, one pair each on the meso- and metathorax. The legs are slender, the hind leg being the longest. The tarsi are 4-segmented.