

TABLE 3

Per cent increase in fresh weight (uptake of water) in 15 min by cucumber cotyledons, stressed to lose 50% moisture and placed in 0.1 M concentrations of different substances

Solutions	Percent increase in fresh weight	
	Experiment I	Experiment II
Proline	59.45	63.41
Glycine	41.23	48.61
KCl	33.12	31.57
Water	60.79	62.86

proline compared to other solutions and was nearly as good as in water.

In all cases along with water, entry of the solutes into the cotyledons was also observed. Studies on the property of diffusibility of proline compared to other commonly occurring solutes across the membrane systems are in progress.

These properties show that proline can exist in solution along with other solutes, even though the concentration of the other solutes is high. When equimolar solutions are compared, water potential of proline solution appears to be higher. This is an important property which could be of biological significance.

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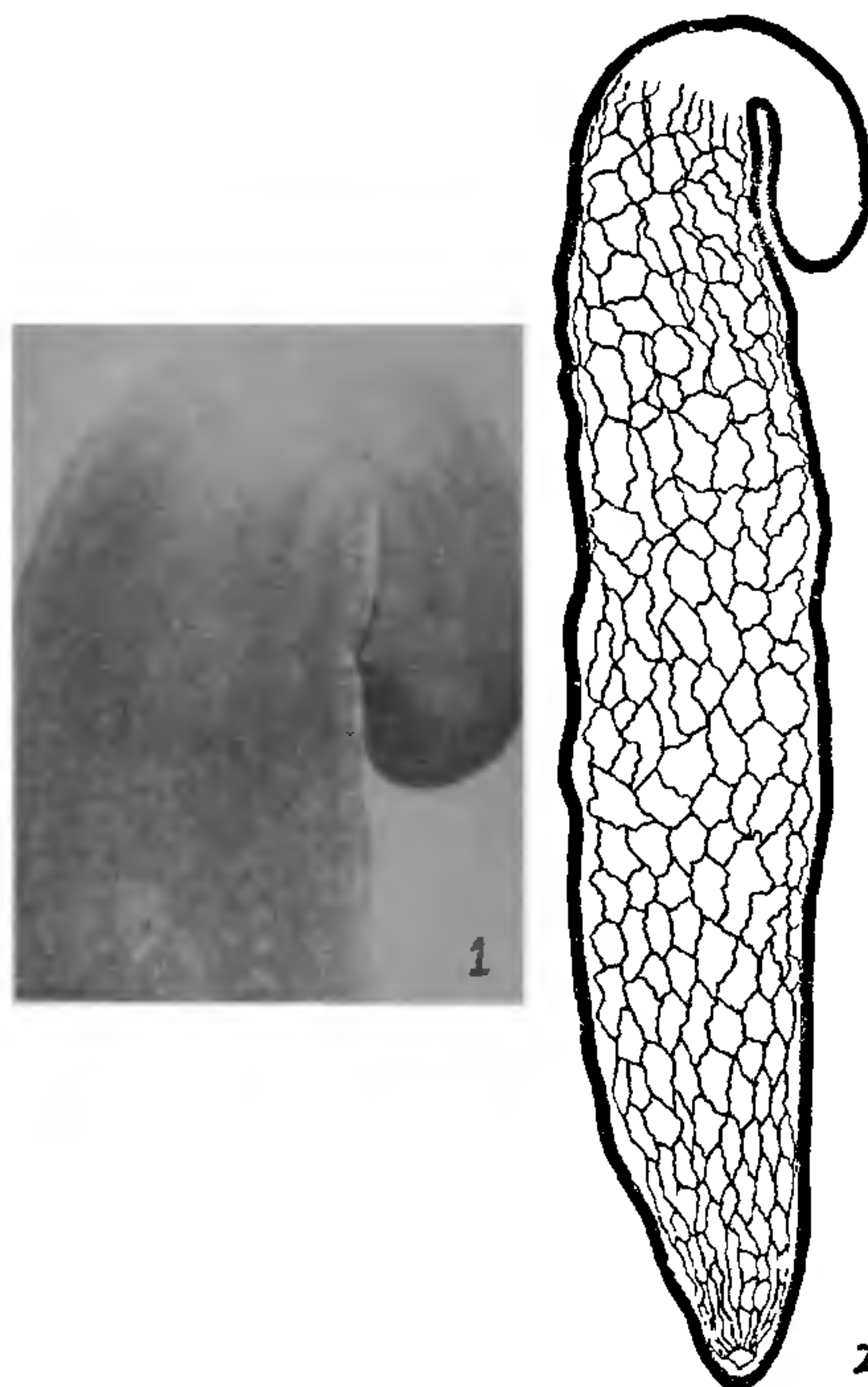
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ESTERASE ACTIVITY IN THE OSMOREGULATORS

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ORIGINAL observations on the osmoregulatory system of caryophyllaeids date from the mid 19th century and are largely confined to *Caryophyllaeus mutabilis* and *Archigetes* species. A few notable references in this regard are from Hunter¹, Blanchard², and Mackiewicz³. Little attention has been given on the osmoregulatory system in other species. The present communication deals with the osmoregulatory system of two species of caryophyllaeids *Lytocestus indicus* and *Pseudocaryophyllaeus indica*.

Fresh specimens were collected in cold physiological saline from freshwater siluroid fish, *Clarius batrachus* and immediately fixed in cold 4% formalin for one hour. The parasites were washed in cold distilled water three times and transferred into incubation medium of Holt & Withers⁴ maintained at 37°C.



Figures 1, 2. 1. *Lytocestus indicus* showing the esterase activity in the excretory canals. 2. Diagrammatic representation of excretory system in *L. indicus*.

The authors found that *L. indicus* and *P. indica* were selectively stained and the number and the arrangement of canals in both the types of parasites were identical. Five pairs of longitudinal canals originate

from the junction of the neck and the body. These canals anastomose in such a fashion as to give a 'honey-comb' like appearance. They descend to the posterior end where they terminate at the excretory bladder. The excretory bladder is triangular, the broad end receiving the longitudinal canals and the narrow end communicating with the exterior (figures 1 and 2).

The incubation medium of Holt & Withers⁴ is for staining esterases; however, this method also stains certain lipids but as the excretory canals were not stained when the specimens were pre-incubated with eserine, it may be concluded that it is the esterases present in the canals which take up the stain. The Holt & Withers⁴ method was slightly modified in that the percentage of ferrocyanide was halved.

This indicates that there is some difference between the esterases present in the nervous system and the osmoregulatory systems.

Hunter¹ has suggested that the canals, apart from excretion might also aid in scolex movements as he

found more canals in motile scolices. Mackiewicz³ suggests that the number of tubules directly correlated with the metabolic activity and explained as active role of canals which influence body and scolex movements.

The present findings concur with the conclusions of Mackiewicz³ as the presence of esterases does indicate neuromuscular activity of the canals.

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ANNOUNCEMENTS

MATERIALS AND TESTING - THE INTERRELATIONSHIPS CONFERENCE

The Materials and Testing Group of the Institute of Physics in collaboration with the Plastics and Rubber Institute is organising a conference entitled "Materials and Testing" - the inter-relationships' on 8-9 July 1982 at the University of London. The lectures will be held at the School of Oriental and African Studies, Malet Street and residential accommodation will be at Commonwealth Hall, Cartwright Gardens, London WC1H 9EB.

The purpose of this two day conference is to provide a forum to cross the boundaries between "materials" and "testing". An examination will be made of the inter-relationship between microstructure and mechanical properties, mechanical properties with structural design and integrity assessment through soundy based non-destructive means. The scope is wide including metals, polymers, concrete, ceramics, composites and glasses.

Invited speakers include: Professor F. M. Burdekin (UMIST), Dr. J. F. Knott (University of Cambridge), Dr. A. J. Kinlock (MOD), Dr. P. Melville (CEGB), Mr. R. S. Sharpe (Harwell), Dr. W. Reynolds (Harwell) and Dr. G. Curtis (Harwell).

Further information may be obtained from: The Meeting Officer, The Institute of Physics, 47 Belgrave Square, London SW1X 8QX, UK.

SPECIAL SYMPOSIUM ON MOLECULAR BIOPHYSICS AND BIOCRYSTALLOGRAPHY

In connection with the sixtieth birthday celebrations of Prof. G. N. Ramachandran, a Special Symposium on Molecular Biophysics and Biocrystallography will be held at the Department of Crystallography and Biophysics, University of Madras, from December 28-31, 1982.

Original research papers are invited to the symposium broadly covering the following topics: Structure of Collagen and Related Topics; Theoretical Approaches (classical and quantum chemical) to Conformation of Biopolymers; Magnetic Resonance and Chiroptical Methods of Study of Conformations of Biopolymers; Statistical Applications in Crystallography; Methods in Crystal Structure Analysis; Crystal Structure Analysis of Constituents of Biopolymers and Other Molecules of Biological Interest; Structure and Dynamics of Proteins and Nucleic Acids; Biomolecular interactions. Abstracts of papers limited to 200 words are to be sent before 30th August 1982.

A Festschrift Volume is also planned, with articles contributed by leading scientists on topics covering Crystallography and Molecular Biophysics.

Symposium correspondence and general correspondence may be addressed to Dr. N. Yathindra and Dr. S. Parthasarathy respectively, Department of Crystallography and Biophysics, University of Madras, Guindy Campus, Madras 600 025.