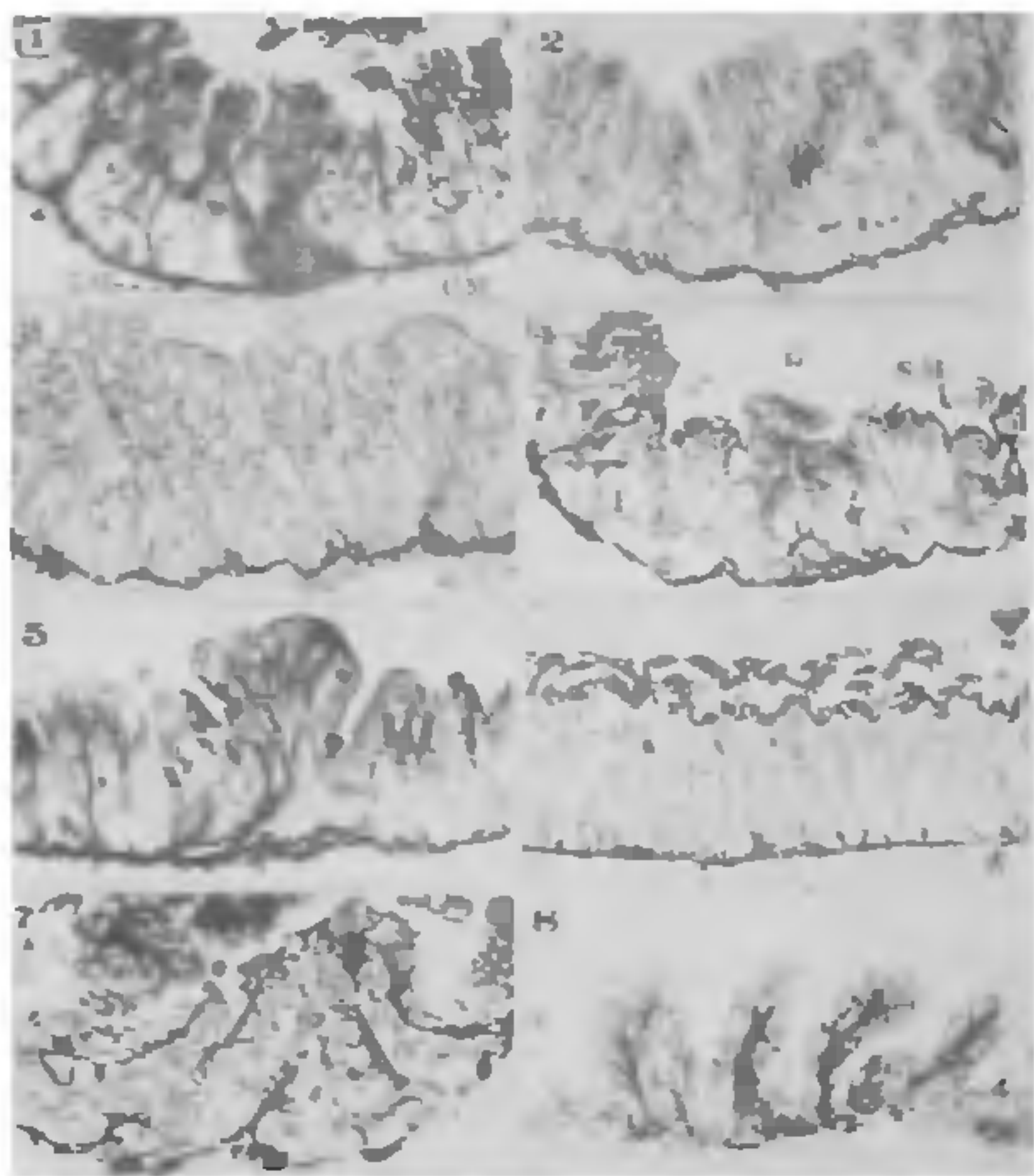


Discussion

In *O. varicornis* the mid-gut epithelium has shown certain marked histological changes as a result of the effect of prolonged starvation. These histological changes are the shortening of the epithelial cells, and their reduced secretory activity. Further, it was shown for this insect that normal histological conditions of the epithelium and its secretory activity are restored, 12 to 24 hours after the commencement of feeding. It may be inferred from these observations that the starvation for a prolonged period of 48 hours appears to have no influence over the production of secretory substances (enzymes). These observations are consistent with those of Bhaskaran² who has reported for *C. purpureus* that the epithelium of first mid-gut of 48 hours starved insect is completely stretched as a



FIGS. 1-8: Fig. 1 Cross section of the first mid-gut of normal insect showing the folded columnar epithelium (CE), Longitudinal (LM) and Circular (CM) layer of muscles. \times Ca 500. Fig. 2 C. S. of the first mid-gut of starved insect showing the sparse distribution of the cytoplasmic granules. \times Ca 500. Fig. 3 C. S. of the second mid-gut of normal insect showing columnar epithelium. \times Ca 500. Fig. 4 C. S. of the second mid-gut of starved insect showing cytoplasmic vacuoles (V), less amount of secretory materials (SM) in the lumen (L) and the reduction in the size of the columnar cells \times Ca 500. Fig. 5 C. S. of the third mid-gut of normal insect showing a large epithelial fold. \times Ca 500. Fig. 6 C. S. of the third mid-gut of starved insect. Note the flattened surface of the epithelium. \times Ca 500. Fig. 7 C. S. of the fourth mid-gut of normal insect showing epithelial folds. \times Ca 500. Fig. 8 C. S. of the fourth mid-gut of starved insect. Note the reduction in the size of the columnar cells. \times Ca 500.

translucent sheet devoid of its normal cytological feature. He has also reported the occurrence of digestive enzymes in the gut of this insect irrespective of the nutritional status. In this insect, starvation for a period of 48 hours appears to have no influence over the production of digestive enzymes. Similarly, in *Trogoderma* all the enzymes identifiable in the mid-gut extract of normal larva are found to be present in the larva starved for a continuous period of 10 days⁴.

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Department of Zoology,
Annamalai University,
Annamalainagar, 608 101, India,
December 15, 1977.

S. SABESAN.

N. RAMALINGAM.

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CHANGES IN LEVEL OF KETO ACIDS DURING PERITHECIAL DEVELOPMENT OF *CHAETOMIUM GLOBOSUM* KUNZE

KETO acids play a vital role in fungal metabolism and provide the carbon skeleton for the synthesis of amino acids and proteins^{1,2}. In the present communication an attempt has been made to study the changes in the production of keto acids in the culture filtrate during perithecial development of *Chaetomium globosum* Kunze.

Seven days old culture of *C. globosum* Kunze was inoculated to Asthana-Hawker's broth and incubated at $\pm 25^{\circ}$ C. Fungal mats of 4, 8 and 12 days old cultures were harvested and the culture filtrates were analysed for total quantity of keto acids³. Perithecial production at different stages was recorded.

Quantity of keto acids produced at different stages of fruiting body formation are recorded in the following table.

Records show that there is a direct correlation between the quantity of keto acids and stage of perithecial development. Higher accumulation of keto acids in fully mature culture reflects that its requirement dimi-

TABLE I

Days of incubation	Quantity of keto acids. mg/100 ml	Stage of Development
4	1.03	Only filamentous vegetative
8	1.3	Immature perithecial stage
12	1.33	Mature perithecia

nishes with ageing, since the process of growth slows down considerably. Similar observation have been reported by some earlier workers in higher plants^{4,5}.

P.G. Department of Botany,
Bhagalpur University,
Bhagalpur 812 007,
January 9, 1978.

K. S. BILGRAMI.
A. K. SHRIVASTAVA.

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NATIONAL SOLAR ENERGY CONVENTION

The National Solar Energy Convention organised by the Central Salt and Marine Chemicals Research Institute, Bhavnagar, will be held from December 20-22, 1978 at C.S.M.C.R.I., Bhavnagar.

The Convention will have nine sessions dealing with the following areas: (i) Photovoltaics, Photochemistry, Photobiology and Radiation, (ii) Solar Flat Plate Collectors, (iii) Solar Concentrators, (iv) Solar Thermal Power System, (v) Space Heating and Cooling, (vi) Energy Storage, (vii) Selective Coatings, (viii) Rural Applications (ix) Industrial Applications.

A two-day Pre-Convention Workshop on December 18 and 19, 1978 on Desalination, Solar Ponds, and Solar Energy for Rural Development has been planned.

Solar Energy Scientists and Engineers are invited to send their papers for presentation at the Convention. The following time schedule shall be followed: Receipt of Abstracts: April 30, 1978, Receipt of full Papers: July 30, 1978.

For further details please contact: Dr. K. S. Rao, Secretary, N.S.E.C. Salt Research Institute, Bhavnagar 364 002.

AWARD OF RESEARCH DEGREES

M.S. University of Baroda has awarded the Ph.D. degree in Botany to Shri Paresh Hariprasad Bhatt; Ph.D. degree in Psychology to Shri Vithaldas Ratansinh Thakkar; Ph.D. degree in Engineering to Shri Suryakant Narsinhbhai Patell.

Utkal University, Bhubaneshwar, has awarded the Ph.D. degree in Botany to Shri G. Mohan Rao; Ph.D. degree in Chemistry to Mrs. Sreelekha Dash Bhattamisra; Ph.D. degree in Chemistry to Shri Himanshu Kumar Patnaik.

Tamil Nadu Agricultural University, Coimbatore, has awarded the Ph.D. degree in Agriculture to

Shri T. Kumaraswami, Shri M. Thankappan, Shri S. Sithanantham.

Kakatiya University, Warangal, has awarded the Ph.D. degree in Botany to Shri P. Laxminarayana; Ph.D. degree in Physics to Shri M. Jagan Mohan Rao.

University of Cochin has awarded the Ph.D. degree in the Faculty of Science to Shri S. Sasidharan Nair.

Osmania University, Hyderabad, has awarded the Ph.D. degree in Physics to Shri S. G. Satyanarayana; Ph.D. degree in Chemistry to Shri M. Hari Babu; Ph.D. degree in Botany to Shri P. V. Rajeswara Rao.