and inhibits contraction of the larvae resulting in larval-like tanned puparia. The treated larvae are sluggish and sometimes even motionless.

Pupariation in flies is a complicated process involving intricately timed and balanced neurosecretory and neuromuscular mechanisms[9]. Ecdysone had been shown to control this process and its primary action ir at the transcriptional-translational level[1,6]. The puparia-tion delay observed with thioacetamide may be the result of the inhibition of RNA transport which is essential for the synthetic apparatus of the cell[2]. I' is of interest to point out that the inhibitors of RNA and protein syntheses have been shown to affect pupariation[4,7]. Alternatively, pupariation delay may be due to a disturbance in the endocrine system of the insect. Zderek and Fraenkel[9] are of the view that puparial shape could reflect whether the process has occurred normally or not. The length and wrinkled surface of the puparia seem to suggest that thioacetamide attacks only the longitudinal contraction and cuticular shrinkage like bee venom and tetradotoxin[8]. Further studies using pure hormones on thioacetamide-treated larvae may elucidate the mechanism of pupariation delay induced by thioacetamide.

School of Life Sciences,
Jawaharlal Nehru University,
New Delhi 110 067,
June 3, 1978.

A. SRINIVASAN.*
P. C. KESAVAN.

* Mailing address: Dr. A. Srinivasan, Bldg. 37, Room 1A09, National Institutes of Health, Bethesda, Maryland 20014, U.S.A.

1. Berreur, P. and Fraenkel, G., *Science*, 1969, **164**, 1182.
2. Clark, M. K. and Dahm, P. A., *J. Cell Biol.*, 1973, **56**, 870.
3. Kleinfeld, R. G. and Von Haam, E., *J. Biophys. Biochem. Cytol.*, 1959, **6**, 393.
4. Sekeris, C. E. and Karlson, P., *Arch. Biochem. Biophys.*, 1964, **105**, 483.
5. Sivasubramanian, P., Ducoff, H. S. and Fraenkel, G., *J. Insect Physiol.*, 1974, **20**, 1303.
6. Slama, K., Romanuk, K. and Sorm, F., *Insect Hormones and Bioanalogues*, Springer, Vienna, 1974.
7. Srinivasan, A., "Studies on characterization of test systems for elucidating the pathways of action of caffeine," *Ph.D. Thesis*, Jawaharlal Nehru University, New Delhi, 1977.
8. — and Kesavan, P. C., *J. Toxicol. Environ. Hlth.*, 1977, **2**, 569.
9. Zderek, J. and Fraenkel, G., *J. Exp. Zool.*, 1972, **179**, 315.

ON A NEW CESTODE *YORKERIA SOUTHWELLI* (CESTODA : ONCHOBOTHRIIDAE) FROM A MARINE FISH

A NEW species of *Yorkeria*, *Y. southwelli*, is described from a new host from India. Twentyfive specimens of this species have been collected from the spiral valve of *Ginglymostoma conolor* at Ratnagiri (West Coast of India).

Description

(Measurements in mm): The cestodes were composed of 30–40 segments. The largest worm measures 8 in length and 0·33 in width. Scolex bears four bothridia in pairs, the paired bothridia set on a stout stalk, two stalks uniting into common trunk in 'Y' or 'T' fashion. The stalk measures 0·91 in length and 0·11 in width in immature worms but measures 0·42 in length and 0·15 in width in mature worms, *i.e.*, the length of stalk decreases and its width increases in mature worms. A short neck present. Each bothridium is oval (0·52–0·58 × 0·34–0·36), divides into two loculi by a transverse septum. Anterior small loculus measures 0·15 × 0·23 and posterior large loculus measures 0·33 × 0·34 in mature worms, and are armed with a pair of 'U' shaped hooks of bright yellow colour, unequal in size, placed near each lateral extremity of septum, small hooks measure 0·19 in length and 0·02 in maximum width, large hooks measure 0·38 in length and 0·04 in maximum width; inner limbs of the hooks are longer than the outer limbs. The stalks of the bothridia are covered with very minute 'T' and 'Rose thorn' shaped spines. Inner longitudinal muscle bundles are attached to each bothridium and continue in neck region and into the strobila.

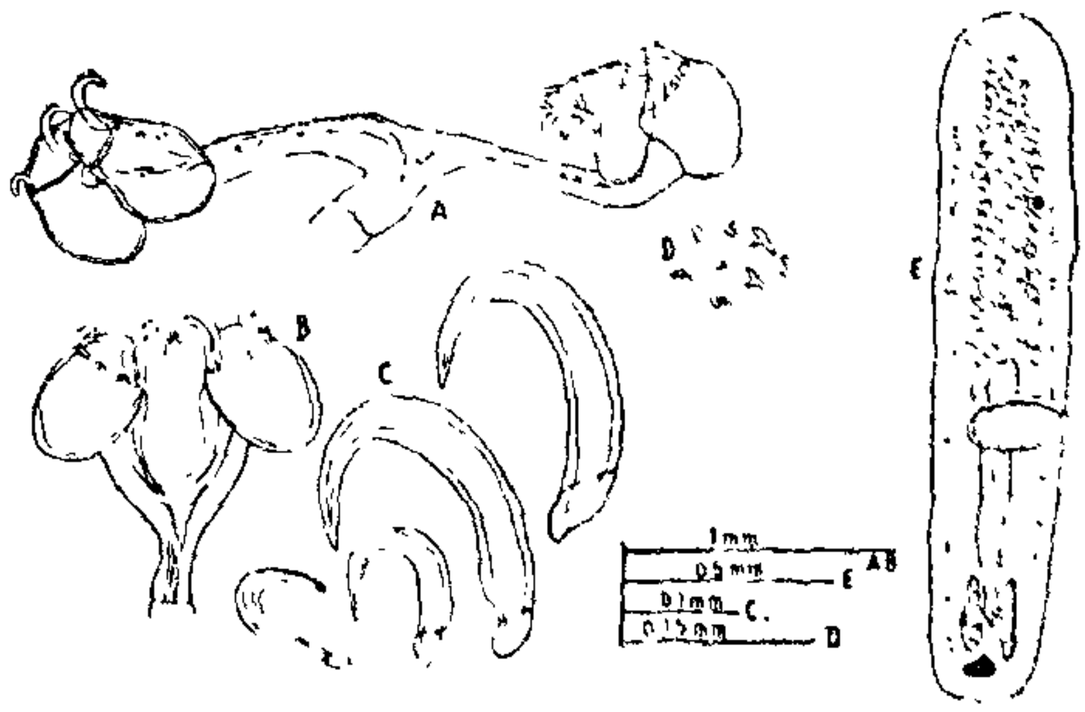

FIG. 1. *Yorkeria southwelli* n. sp. A, Scolex of immature worm; B, Scolex of mature worm; C, Bothridial hooks; D, 'T' and 'Rose thorn' shaped hooks of scolex; E, Mature segment.

Mature segment measures 1·55 in length and 0·33 in width. Testes rounded, 90–95 in number, in a single field, anterior to cirrus pouch, and measure 0·03 in

diameter. Cirrus pouch oval, transversely placed below middle of the segment, measures 0·24 × 0·11, opens by a common genital pore marginally; genital pores are irregularly alternate, measure 0·02 × 0·03. The vagina lies anterior to cirrus pouch and runs up to shell gland. Ovary is bilobed, 'H' shaped, situated at the posterior end of the segment, measures 0·14 in length at isthmus region 0·03 in width at isthmus, and 0·18 in width at lobe region. Uterus tubular, starts from shell gland, reaches up to middle of segment, just anterior to cirrus pouch, measures 0·68 in length and 0·07 in width. Shell gland is situated behind the ovary, measures 0·08 × 0·05. Vitellaria granular, situated in lateral cortical parenchyma, not reaching up to lateral margins of the segment.

Discussion

The genus *Yorkeria* was established by Southwell[1] with its type species *Y. parva* from *Chiloscyllium indicum* at Ceylon. Subhapradha[3] redescribed *Y. parva* from *Chiloscyllium griseum* at Madras, India. The present species differs from *Y. parva*, the only known species, in having 'T' and 'Rose thorn' shaped minute spines on bothridial stalks, in the number of testes (90–95 *vs.* 60–75, Subhapradha[3], position of genital pore (below middle of segment *vs.* above middle), structure of ovary ('H' shaped *vs.* 'X' shaped in cross section), structure of vitellaria (granular *vs.* consisting of large acini) and position of uterus (extends anterior to cirrus pouch *vs.* does not). Therefore the present species is considered as a new species and designated as *Y. southwelli* in honour of Southwell, T.

The author is thankful to Prof. R. Nagabhushanam and Dr. G. B. Shinde for providing laboratory facilities and valuable guidance. He is also grateful to CSIR for the award of Post-doctoral Research Fellowship.

Post-doctoral Research Fellow, R. A. Deshmukh.
Department of Zoology,
Marathwada University,
Aurangabad 431 004, India, *July* 15, 1978.

1. Southwell, T., *Ann. Trop. Med. and Parasitol.*, 1927, **21**, 351.
2. —, *The Fauna of British India Including Ceylon and Burma*, Cestoda, Taylor and Francis, London, 1930, **1**.
3. Subhapradha, C. K., *Ind. J. Helminth.*, 1955, **7** (2), 41.
4. Wardle, R. A. and McLeod, J. A., *The Zoology of Tapeworms*, University Minnestota Press, Minneapolis, 1952.
5. Yamaguti, S., *Systema Helminthum*, Vol. II. *The Cestodes of Vertebrates*, Intescience Publishers Inc., New York, 1959.

FORMATION OF CORPUS LUTEUM IN THE FIELD CRICKET *PLEBEIOGRYLLUS GUTTIVENTRIS* (WALK.)

The ripe oocyte of insects ruptures the epithelial plug at the time of ovulation and passes into the oviduct, leaving an epithelial plug as a degenerating conspicuous structure, known as corpus luteum[1]. The existence of this structure at the base of ovariole after ovulation has been reported for a few species of insects such as *Termes redemanii*[2], *Rhodnius prolixus*[3], *Locusta migratoria*[4, 5], *Schistocerca gregaria*[6], *Bombus*[7], and *Oncopletus fasciatus*[8]. The histological studies of the corpus luteum of *S. gregaria*[6] and *L. migratoria*[5] and the works referred to above have revealed that this structure does not show progressive development after ovulation like the corresponding organ in mammalian ovary but shrinks and almost disappears by the time the next egg completes its development. A review of literature on this subject warrants further investigations on the formation of corpus luteum, the occurrence of yellow pigments, their chemical nature and functional significance in other insects. The present paper deals with the formation of corpus luteum and its histological structure in *Plebeiogryllus guttiventris*.

Adult females of *P. guttiventris*, collected from Annamalainagar area, were reared in bottles along with males. They were fed with pumpkin, cucumber and powdered pea-seeds. The time of ovulation was recorded and the ovaries were dissected out at different intervals of time after ovulation under physiological saline solution, in order to study the progressive development of corpus luteum. The ovarioles were fixed in fresh Bouin's fluid. Heavily yolked eggs were treated with 4% phenol in 80% alcohol for a period of 24 hours to facilitate easy sectioning of them as suggested by Slifer and King[9]. Paraffin sections of ovarioles were cut at 6–8 μ thickness and stained with Heidenhain's iron haematoxylin and counterstained with eosin in 90% alcohol.

At the time of ovulation the epithelial plug breaks down and the egg leaves the pedicel. After ovulation the follicle consists of an empty colourless tube with scattered cells of the follicular epithelium at its apical region (Fig. 1). These cells, some of them showing signs of degeneration, have oval shaped nuclei. They are separated from the developing oocyte by the epithelial plug consisting of relatively smaller cells with feebly stained nuclei (Fig. 1).

After 20 hours of ovulation the follicle cells seem to aggregate, perhaps due to the contraction of the follicle, at the base of ovariole immediately below the epithelial plug forming the corpus luteum. The nuclei of the cells of the corpus luteum are intensively stained with haematoxylin. The corpus luteum, at this stage, forms a globular mass of cells with a small cavity