

## BOOK REVIEWS

*Bonellia*, The Annals of Zoology—Vol. 17, 1980 B, by J. Z. Wilczynski, edited by Beni Charan Mahendra and published by The Academy of Zoology, Khandari Road, Agra 2, Pages: 172, Price:

Some thirty years ago, in 1954, a few teachers of Zoology, several located in Agra, decided to constitute an international organization of Zoologists which they called the Academy of Zoology. Largely the effort of Dr. Beni Charan Mahendra, a senior Zoologist in the country and at that time Professor in Agra College, the Academy set out to solicit support from Zoologists both in India and abroad, and during the quarter century of its existence has been able to publish a journal 'The Annals of Zoology', whose Silver Jubilee Volume includes the monograph on "*Bonellia*" by the late Prof. Jan Z. Wilczynski of Poland. At the time of Prof. Wilczynski's death this work on *Bonellia* was largely in the form of notes based on his observations and it was handsome of both Prof. Wilczynski as well as his son, A. P. Wilczynski to have decided to hand over this material to Dr. Mahendra for publication as a special memoir by the Academy of Zoology in its Annals. It is also a measure of Dr. Mahendra's initiative that he was able to secure this manuscript which must mark the latest contribution to the biology of this remarkable animal.

There, however, the compliments must stop. For, the zeal and the enthusiasm attendant on such a publication have not been matched, unfortunately, by the results one sees. The work deserved better treatment at the hands of the editor, printer, proof-reader and the illustration-reproducer. There are many typographical errors, the half-tone figures are well-high undecipherable, and while most line drawings can be considered reasonably good, they could have been rendered more illustrative at the hands of an experienced printer who had a better awareness of the material he was dealing with. The Editor too must share the blame. In his enthusiasm to make '*Bonellia*' a component of the achievements of the Academy of Zoology and with admittedly inadequate resources to produce a respectable and well brought-out monograph, Dr. Mahendra clearly was either unable or unwilling to face the realities of bringing out a volume of this kind. In the process he has, I am afraid, transmitted the insubstantiality of the Academy of Zoology to the monograph on *Bonellia* which the latter truly does not deserve.

For, not only *Bonellia* is interesting, but Wilczynski's contributions are by any measure significant. In the early decades of the century, F. Baltzer stood out as an outstanding investigator on *Bonellia* and it could be truly said that Wilczynski's

contributions are nearly as noteworthy. And while Bonelleidae in general and the genus *Bonellia* in particular offer many points of interest in almost all aspects of their ecology, physiology and development, it seems unfortunate that not enough attention has been devoted to this animal with an almost cosmopolitan and ubiquitous geographical distribution.

The present monograph deals almost exclusively with *Bonellia viridis*, the Mediterranean species. *Bonellia viridis* is a marine unsegmented worm with a body 8-10 cm. long, from the front end of which arises a long proboscis (often as long as a meter) which is bifid towards its distal end. There is however much variation in size as well as external appearance in the different genera included in the Bonelleidae.

The greatest interest lies in the remarkable sexual dimorphism in *Bonellia*. The male is very small (not more than a few mm.) and lives in the uterus of the female, almost as a parasite. This extreme dimorphism has evoked much interest, and theories referring to the toxic influence of the female in arresting the development of the early indifferent larva have been advanced in the past. Wilczynski however is of the view that in *Bonellia viridis* sexual dimorphism is due not to any external factor but should be looked for in the phenomenon of production of two types of eggs, female producing and male producing. There is however no cytological or genetical evidence for this view.

Wilczynski's work on *Bonellia* by itself advances our knowledge of this animal very little. His contributions to the morphology or internal anatomy are of limited consequence to the modern biologist interested in principles rather than in facts. But Wilczynski's '*Bonellia*' is of special significance in directing our attention to the unique phenomenon of sexual dimorphism which in this animal perhaps attains maximum dimensions. Modern experimental methods, including those of biochemistry, should be able to throw light on this phenomenon which, however widely prevalent, could be due to different causes, especially among the invertebrates.

Altogether, it could not be said '*Bonellia*' advances our knowledge of this animal very considerably; but it is perhaps right to acknowledge that the contribution of Wilczynski lies predominantly in directing our attention to the many interesting aspects of this animal which are worthy of further study.

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**"Annual Review of Pharmacology and Toxicology"**—Vol. 22, 1982, Eds Robert George, Ronal Okun, Arthur K Cho, published by Annual Reviews Inc. 4139 El Camino Way, Palo Alto, California 94306, U.S.A. Pages: 671, Price: USA \$ 22.00 elsewhere 25-00.

Annual Review of pharmacology and toxicology Vol. 22, 1982 has appeared. The laudatory aspects of the review—readability, information relevance, in depth-review of the literature—are the factors that will continue to make the review popular among the research scholars, physicians and academicians.

The article 'Food-drug interactions' is interesting as it deals with the effects of changes in man's diet on drug metabolism. Role of Angiotensin converting enzyme (ACE) inhibitors in the treatment of hypertension and in congestive cardiac failure resistant to digitalis glycosides and diuretics and other therapeutic uses of ACE inhibitors are discussed in detail by Michael J. Autonaccio. The myocardial salvage by drugs like  $\beta$ -blockers, nitroglycerin, Calcium antagonists and prostaglandin synthesis inhibitors—will be of undoubted value to the clinicians and cardiologists.

Influence of sympathetic system on renin release, Acupuncture Analgesia, Drug interactions at the GABA receptor-Ionophore complex, Monovalent carboxylic ionophores are added attraction to the review. Article on New  $\beta$ -lactum antibiotics and sociopharmacology are lucid, comprehensive and are of great help to medical-men and psychiatrists.

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**Rothamsted Experimental Station Annual Report For 1981**—Parts I and II published by Rothamsted Experimental Station, Harpenden, Herts, AL 52 JQ. Pages 322, and 160. Price: £9-00 for both parts.

The report is in two parts at £ 9 (not sold separately). Fungicides increased wheat yields upto 2.7 tonnes/ha.

National soil maps for England and Wales will be ready in 1984. Fertiliser requirements for winter wheat are being computed through nitrogen in soil profiles to 90 cms determined in autumn/spring using a nitrogen balance system. A new method has been developed for inoculum preparation of vesicular arbuscular mycorrhizae.

Botany Department is investigating the kinetics, structure and function of ribulose biphosphates carboxylase/oxygenase, the enzyme that catalyses CO<sub>2</sub> fixation in chloroplasts and initiates photorespiration by oxidative splitting of RuBP molecule. Defining the homologous prolamins in barley, rye and wheat, is attempted by cross-hybridation of mRNA coding for the prolamins to cloned cDNA, known to contain sequences specifying sulphur rich barley prolamins. Triadimenol insensitive strains of cereal mildews were identified in the field. Work is in progress on the prediction of levels of viral infection of beet. Beet mild yellowing virus has been purified and its antiserum prepared. Identification of single viruliferous aphids is now possible using immunosorbent electron microscopy or established enzyme-linked immunosorbent assay which may facilitate determination of the proportion of aphids arriving on crops that are carrying virus and thereby improve the spray-warning system. However, the virus content of an aphid and its ability to transmit virus are not necessarily related.

Members of Insecticide and Fungicide Department have identified the oviposition attractant pheromone of the mosquito *Culex pipiens fatigans* as the lactone of erythro-6-acetoxy-5-hexadecanolide which is stable and relatively nonvolatile. This synthesized compound has a potential application in vector control. Studies on the earthworms as a new source of protein for animal feed were extended with the objective of developing waste disposal methods and the residual material as plant growth medium. These reports are invaluable for libraries, agricultural institutions and universities.

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