

A. Kaestner: Lehrbuch der Speziellen Zoologie. Band I: Wirbellose. 3. Teil. Insecta: A. Allgemeiner Teil. VEB Gustav Fischer - Verlag, Jena, 1972, 272 pp., 182 figs.

The book is a part of a publication consisting of several volumes and covering basic fields of zoology. It deals with general zoology of insects, in particular with the problems of morphology, physiology and ontogeny. The book is divided into 27 chapters.

The chapters entitled "Body covering", "Body", "Skeleton muscles and ligaments", "Wings", "Extremities", "Production of vibration signals", "Head" are devoted to the origin, morphology and function of relevant organs. The chapter dealing with the flight of insects from the aspects of mechanics of motion and aerodynamics, as well as the chapter on the structure of head, describing formations important in systematics and from the aspect of phylogenetical development, are elaborated upon in full scale.

The subsequent chapters called "Coordination systems", "Senses and their organs", "Mechanical-receptor sensillae", "Chemoreceptive sensillae", "Light sense", "Sense for time and periods, orientation in electromagnetic fields, sense for temperature and pain", "Glands", "Intestine and digestion", "Malpighian tubes and excretion", "Water economy", "Synthesis of reserve substances and excreta", "Circulatory system", "Respiratory system" and "Reproductive system" cover the anatomy and physiology of sensory and internal organs of insects. The chapters concerning the senses of insects are written in greater detail and contribute some new knowledge.

Another part of the book concerns reproduction, embryology and ontogenetic development of insects. It is composed of the chapters entitled "Reproduction", "Egg and embryogenesis", "Post-embryonal development" and "Metamorphosis of insects".

The last but one chapter "Distribution and resistance to diverse climatic conditions" deals with geographical distribution of insects and their physiological adaptations to fluctuations of temperature. The final chapter called "System and phylogeny of insects" gives a brief account of phylogenetical development of insects and on this basis presents the system of insect orders, on the whole similar to the present systems (Obenberger 1955, Eichmann, Köhlhorn 1970 etc.). The book is provided with references relevant to each chapter.

Professor Kaestner's book is well arranged and compiles in a brief but compact form detailed information on general entomology. The book is well illustrated, and its general appearance and format are characterized by text-book form. The bibliography arranged according to topics is less clear than the usual alphabetical arrangement. The volume is a good university text-book and will be indispensable for everyone who concerns himself with general and applied entomology, physiology of insects and parasitology.

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