INTRODUCTION
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Ixodid ticks are highly specialized bloodsucking arthropods. Despite their relatively few species (about 600), ixodid ticks have an extraordinary medical and veterinary importance. The exceptional importance of ixodid ticks results from their roles as vectors of numerous disease agents of man and domestic animals and also from the consequences of their parasitism.

Ixodid ticks are grouped into the family Ixodidae, which belongs to the superfamily Ixodoidea. The life cycle consists of egg, larva, nymph and adult. Depending on species, the cycle duration may vary from several months to several years. Ixodid ticks are obligatory temporary parasites which spend their life cycle partly on the host and partly in the external environment. The ratio between free-living and parasitic stages of the cycle depends on the particular relationship between the ticks and their hosts. In a 3-host life cycle, ticks remain on the host for only several days, and larvae, nymphs and adults each feed on different hosts. In a 2-host cycle, the blood-fed larvae remain on the same host and molt there to nymphs, which leave the host after feeding. Ticks with a 1-host cycle spend most of their life on the host body. These ticks attach to the host at the larval stage and leave it only after completing female feeding.

The sharp difference between a free-living and parasitic existence results in the morphological, physiological and biochemical adaptations for different stages of the life cycle at any active morphological phase (larva, nymph, adult). Each active morphological phase can be subdivided into several physiological stages: 1) post development, 2) activity, 3) feeding, 4) molting (for larvae or nymphs) or 5) oviposition (for females). The detailed description of the life cycle can be found in the monograph by Balashov (1967). Because of the biological features of ixodid ticks, a morpho-physiological investigation should take into account not only the morphological phase studied, but also the physiological stages of the particular phase.

The literature devoted to various aspects of the study of ixodid ticks includes several thousand bibliographic references (Hoogstraal, 1970-1974).* The necessity for improvement of the methods of protection from and control of ticks, as well as the diseases transmissible by them, has stimulated numerous investigations in their ecology, zoogeography and systematics and also with various aspects of

*see: Hoogstraal, H. Bibliography of Ticks and Tickborne Diseases from Homer (about 800 B.C.) to 31 December 1981. Vol. 7. Special publication. May 1982. Namru-3, Cairo, Egypt. - A. R. & H. H.