# F O R E W O R D

Insects belonging to the family Simuliidae (Nematocera:Diptera) are commonly known in English as "black flies". In the Spey valley of Scotland these insects are also known as birch flies. In different parts of the U.S.A., these flies are also known as buffalo gnats or turkey gnats. In India the term "black fly" is used in the scientific literature, and in Darjeeling these insects are popularly called "bhusuna".

Female black flies of most species are haematophagous, and some of them act as the efficient vectors of parasites and pathogens causing a lot of distress to mankind (Fallis, 1964). These flies are known to transmit some human and non-human filaroid nematodes in the tropical Africa, Central America, Brazil, Britain and the U.S.S.R. These flies also act as the vectors of some protozoan diseases like trypansomiasis and leucocytozoonosis in America, Europe and Central Asia. These flies may also transmit some viral diseases. In India some black flies are known to be troublesome pests, but nothing is known about the role of these flies as the effective hosts and vectors of parasites and pathogens in this country.

The black fly fauna in many other temperate countries is well-known (see Davies, 1966). Recently, the workers of these countries have shown through cytological studies that many species of earlier taxonomists actually consist of several similar species, i.e., sibling species. It is now a high time to employ a more refined and restrictive species concept in black fly taxonomy. But in India regarding the taxonomic work nothing further is known since the works of Puri (1932-1933), who mainly traced the fauna of South India. In Darjeeling and its neighbourhood the occurrence of black flies is well-known but the fauna has not so far been widely surveyed, and the present work has been undertaken to supplement and add to the earlier taxonomic works through anatomical studies. For clarity and better understanding of the importance of these insects in relation to human and animal lives the present work also includes studies on certain important bionomical phenomena, viz., the abundance, seasonal distribution and succession, sex-ratio, nocturnal periodicity, host preferences and photophilic behaviour of these insects.

The present investigation is the first attempt of its kind to study comprehensively the fauna and bionomics of black flies of Darjeeling and its neighbourhood in the eastern Himalayas. Observations and collections made in this region over 3 years (1968-1971) form the basis of this work.

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