Parasites of animals in Papua New Guinea recorded at the National Veterinary Laboratory: a catalogue, historical review and zoogeographical affiliations

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Abstract

The catalogue includes more than 700 parasites of domestic and wild animals recorded at the National Veterinary Laboratory, Papua New Guinea, since data began to be gathered at the end of World War 2. It incorporates some information already published and data on parasites, particularly of indigenous fauna, not recorded previously in the country. Wildlife host species include wild pig, deer, bats, murine rodents, marsupials, monotremes, birds, reptiles, amphibians, fishes and invertebrates. The range of parasites in domestic and many wild animals shows great affinity with that found in Australia. Some notable exceptions amongst domestic animal parasites are the endoparasites Trichinella papuae, Capillaria papuensis and Mammomonogamus laryngeus and the economically significant ectoparasites Chrysomya bezziana, Tropilaelaps mercedesae and Varroa jacobsoni that are not recorded in Australia. Unusual host-parasite associations include the larvae of the insects Chrysomya spp. and Lucilia sp., parasites of warm-blooded animals, infesting, respectively, cold-blooded crocodiles and cane toads, and the mammalian mite, Sarcoptes scabiei, on an avian host, cassowaries. No host switching of helminths was seen between domestic and wild animals, or between populations of deer, wild pigs and wallabies when grazing together. The economic importance of certain parasites for domestic animals, the potential threats from introduced or newly-discovered parasites, and the relationship between some parasites and their wildlife hosts, are discussed. Information is presented in two tables: a parasite–host list that includes the location of a parasite in or on a host and a host– parasite list that contains the distribution of the parasites according to province or locality.

Key words: ectoparasites, endoparasites, bacteria, protozoans, helminths, acanthocephalans, annelids, insects, acarines, pentastomids, crustaceans, domestic animals, wildlife

Introduction

The first survey of animal parasites in the country was carried out in 1945/46 by the 1st Australian Mobile Veterinary Survey Unit (AMVSU) (Anonymous 1946) to check the disease status of domesticated animals and to ascertain if animals, mainly horses and dogs, imported by the various armed forces during the second World War (WW2), had introduced animal diseases and parasites that were exotic to Papua New Guinea (PNG). The survey revealed that some had been brought in, but these were effectively eliminated by the subsequent slaughter of affected and “in contact” animals (Egerton & Rothwell 1964).

Dumbleton (1954), on behalf of the South Pacific Commission, prepared a list of parasites and diseases of mostly domestic animals in PNG (as well as other South Pacific countries), based on the AMVSU report and information supplied by the then Department of Agriculture, Stock and Fisheries (DASF); the information was updated by Anderson (1960). A more comprehensive list was produced by Egerton and Rothwell (1964) and further new parasite records were published by Talbot (1968/69). The parasites of particular domestic and farm animals have been reported subsequently by staff of the National Veterinary Laboratory (NVL), namely, Talbot (1969—chickens; 1970—cats; 1972—pigs), Copland (1974, 1975, 1976—pigs), Humphrey (1979, 1984—chickens), Hamir (1984, 1987—dogs), Hamir and Wernery (1987—dogs), Owen (1984, 1990—cattle; 1998—sheep); Owen and Talbot (1983—cattle), Owen et al. (2000—pigs) and Ladds and Sims (1990—farmed crocodiles).