Report of the British Association for the Advancement of Science.
London.
http://www.biodiversitylibrary.org/bibliography/2276

85th Meeting (1915): http://www.biodiversitylibrary.org/item/95822

Article/Chapter Title: The relation of the phylogeny of the parasite to that of the host
Author(s): Harrison LJS
Page(s): Page 476, Page 477

Contributed by: Natural History Museum Library, London
Sponsored by: Natural History Museum Library, London

Generated 25 May 2017 9:15 AM
http://www.biodiversitylibrary.org/pdf4/065474100095822
This page intentionally left blank.
make this unlikely. The ‘explanation’ offered by Fruhstorfer, viz., that ‘the mimics were modified by the same (as yet unknown) influences under which the colouring of the models developed,’ is obviously no explanation at all.

Since some of the forms resembled by the Eronias are known experimentally, and others are on good grounds believed to be more or less distasteful to insectivorous animals, the theory of mimicry appears to be the most feasible interpretation of the conditions obtaining in this genus.

The likeness between Eronia leda and Teracolus auzo is somewhat exceptional. The Eronia is cryptically coloured beneath; and the resemblance to Teracolus, which is strongest in the male, may perhaps be really due to affinity.

6. The Relation of the Phylogeny of the Parasite to that of the Host.

By LAUNCELOT HARRISON, B.Sc.

The proposition I advance is:—That in the case of total obligate parasites, closely related parasites will be found to occur upon phyyletically connected hosts, without regard to other oöcologic conditions. As the state of evolution of the parasite will be less advanced than that of the host, it follows as a corollary: That a study of such parasites may give valuable indications as to host phylogeny.

(The following references may be consulted for more detailed statements:—
(1) Kellogg, American Naturalist, xlvi., p. 129; (2) ibid., xlviii., p. 257;
(5) Harrison, Aust. Zoologist, 1914, p. 7; and (6) Parasitology, viii., p. 88.)

The evidence I shall bring to support the above statements is derived from a study of conditions in the Mallophaga. Kellogg (1) has made a similar statement based on a study of the same group. He has also (2) extended his studies to the Anoplura, and finds that his thesis holds for this order. A striking illustration is the occurrence upon man, upon species of the family Simiidae, and of the genus Ateleus alone among the Cebidae, of the Anopluran genus Pediculus; while the closely related genus Pediculus occurs upon the lower Quadruped.

Johnston (3) has compared the trematode fauna of the frogs of Europe, Asia, America, and Australia, and finds a common occurrence of species of Pneumonaeces in the lungs, Pleurogenes in the intestine, Diplodiscus in the rectum, and Gorgodera in the bladder. He finds flukes from Dasyurus and Ornithorhynchus intermediate between the Fasciolinae of higher mammals and the Psilostominae of the Sauropsida. He also finds (4) that species of Linstowia (Cestoda) and Harmostomum (Trematoda) from Australian marsupials have their nearest relatives among species of the gene from American marsupials. The parasitic Platodes, though not total obligate parasites in the same sense as the Mallophaga, show the same relation to their hosts.

I find that, in general, the Mallophaga parasitic on any avian order are recognisable at sight. In many cases, especially in certain genera, it is possible to state definitely that a parasite has come from a particular family of birds. Many species have a world-wide distribution, but always on closely related birds. Thus Philopterus lori occurs upon all gulls; Lipeurus anatis upon all ducks; L. columba upon all pigeons; Colpoccephalus flavescens upon all hawks. The genus Tetroppthalmus has adopted a specialised habitat in the gular pouch of pelicans, and has its tracheal system specially modified in accordance with the changed conditions. Species of Tetroppthalmus occur on all pelicans, in the same situation, and are all similarly modified. The only reasonable explanation is that the parasites have had common origin.

Owing to equable conditions of nourishment and temperature, the Mallophaga have had no stimulus to evolve as rapidly as their hosts. This is abundantly proved by the fact that parasites from the various genera of a bird family are often hardly specifically distinct. The Philopterus of Cuculus canorus is with difficulty separable from those found upon the Australian genera Cacomantis and Chalcococcyx.

Bird phylogeny has always presented a difficult problem. The biological condition of the Mallophaga indicates that they can afford valuable evidence as
to bird relationships. I have already (6) brought forward strong circumstantial evidence to show that Apteryx is a Ralline bird, and not a Ratite.

Consequently, apart from its academic interest, the hypothesis may have a practical application.

7. The Morphology of the Telencephalon of Spinax as a Type of Elasmo-branch Fore Brain. By J. Stuart Thomson, M.Sc., Ph.D.

The following gray masses or functional areas have been recognised in the fore brain of Spinax: (a) Area olfactoria medialis in the rostral wall and in the median part of the anterior portions of the lateral lobes; (b) Area olfactoria lateralis in the lateral part of the more anterior portions of the lateral lobes; (c) Hypostriatum (Catois) or Area superficialis basalis (Johnston) occupying the greater part of the length of the telencephalon in a latero-ventral and medio-ventral position; (d) Nucleus medialis septi continuous ventrally with the last area mentioned, and occupying a position internal to the downwardly directed spurs of the lateral ventricles; (e) Primordium hippocampi on the dorsal surface; (f) precommissural or paratermal body, a ventral extension of the Primordium hippocampi; (g) Primordium pallii somatici, a correlation area occupying a lateral position in the walls of the prethalamus or telencephalon medium; (h) Nucleus preopticus, an area disposed round the preoptic recess.

The following fibre-tracts have been located: (1) Tractus olfactorius lateralis and Tractus olfactorius medialis; (2) Tractus olfacto-corticalis lateralis rectus; (3) Tractus olfacto-corticalis medio dorsalis; (4) Tractus olfacto-corticalis septi or Tractus cortico-medialis of Botazzi and Kappers; (5) Tractus olfacto-hypothalamicus; (6) Tractus pallii; (7) Tractus hippocampi; (8) Commissura pallii posterior; (9) a tract which may be the fornix of authors, but which does not agree in the distribution of the fibres; (10) Tractus tectae (Edinger); (11) Tractus thalamo-corticalis.

The author has not obtained any satisfactory or conclusive evidence of the existence of a tract which might be correctly termed the corpus callosum.

The paper was illustrated by fifty drawings showing the gray masses and fibre-tracts noted in the preceding paragraphs.

8. The Metamorphosis of Bilharzia, with Demonstration of Specimens. By Lieut.-Colonel R. T. Leiper, R.A.M.C.