Art. XLIV.—*The Fauna of the Florissant (Colorado) Shales;* by T. D. A. Cockerell.

Although the fauna of the Miocene shales at Florissant has been much studied in recent years, no summary has been published since 1906 (University of Colorado Studies, III, pp. 163-168). It is not possible for a student of general geology or palæontology to ascertain precisely what is known from Florissant to-day without a good deal of bibliographical research, and the data compiled in 1906 are no longer in any sense adequate. I therefore present a concise summary, complete to the present date (July 11), but including only described and published species. Families or groups marked with an asterisk are no longer found in North America, while those marked with a dagger are wholly extinct. Genera are only cited when they are extinct and do not fit comfortably into the recognized modern families.

Aves.

Charadriidæ. 1.
Passeres. 1.

Pisces.

Amiidæ. 2.
Catostomidæ. 3.
Siluridæ. 1.
† Trichophanes. 2.
Total Vertebrata. 10.

Mollusca.

Zonitidæ. 2.
Limnæidæ. 4.
Sphœriidæ. 1.
Total Mollusca. 7.

Coleoptera.

Anthicidæ. 1.
Anthribidæ. 7.
Bostrychidæ. 3.
Bruchidæ. 11.
Buprestidæ. 7.
Byrrhidæ. 7.
Calandridæ. 7.
Carabidæ. 33.
Cerambycidæ. 10.
Chrysomelidæ. 11.
Cleridæ. 1.
Coccinellidæ. 2.
Colydiidæ. 2.
Cryptophagidæ. 1.
Cucujidæ. 3.
Curculionidæ. 95.
Dascyllidæ. 2.
Dermestidæ. 3.
Dytiscidæ. 6.
Elateridæ. 3.
Erotylidæ. 2.
Hydrophilidæ. 8.
Lampyridæ. 3.
Lathridiidæ. 1.
Lucanidæ. 2.
Lymexylidæ. 1.
Malachidæ. 2.
Melandryidæ. 1.
Meloidæ. 2.
Mordellidæ. 3.
Mycetophagidæ. 2.
Nitidulidæ. 6.
Otiorhynchidæ. 18.
Parnidæ. 4.
*Paussidæ. 2.
Ptinidæ. 2.
Pythidæ. 1.
Rhipiphoridæ. 1.
Rhynchitidæ. 23.
Scarabæidæ. 16.
Scolytidæ. 4.
Silphidæ. 6.
Staphylinidæ. 45.
Temnochilidæ. 1.

Tenebrionidæ. 7.
Trogositidæ. 1.
Total Coleoptera. 379.

HYMENOPTERA APOIDEA.

Megachilidæ. 9.
Ceratinidæ. 1.
Anthophoridæ. 1.
Bombidæ. 1.
Panurgidæ. 2.
Andrenidæ. 10.
† Protomelecta. 1.
† Cyrtapis. 1.

HYMENOPTERA SPHECOIDEA.

Crabronidæ. 2.
Pemphredonidæ. 2.
Philanthidæ. 2.
Nyssonidæ. 2.
Sphecidæ. 2.
Larridæ. 1.
Mellinidæ. 1.

HYMENOPTERA VESPOIDEA.

Anthoboscidæ. 4.
(Cosilidæ of Ashmead.)
Pompilidæ. 7.
Scoliidæ. 1.
Vespidæ. 3.
Eumenidæ. 3.

HYMENOPTERA FORMICOIDEA.

Poneridæ. 1.
(Many ants have been collected, but not yet described.)

HYMENOPTERA PARASITICA.

Agaonidæ. 1.
Alysiidæ. 3.
Belytidæ. 2.
Bethylidæ. 1.
Braconidæ. 19.
Chalcididæ. 4.
Chrysididæ. 2.
Cleonymidæ. 1.
Cynipidæ. 1§
Diapriidæ. 2.
Eurytomidæ. 2.
Evaniidæ. 2.
Figitidæ. 1.
Ichneumonidæ. 76.
Proctotrypidæ. 1.
Pteromalidæ. 1.
Stephanidæ. 1.
Torymidæ. 6.

HYMENOPTERA PHYTOPHAGA.

Cephidæ. 1.
Xyelidæ. 1.
Lydidæ. 2.
Oryssidæ. 1.
Tenthredinidæ (s. lat.) 29.
Total Hymenoptera. 217.

LEPIDOPTERA.

Nymphalidæ. 9.
Pieridæ. 1.
Tortricidæ. 1.
Œcophoridæ. 1.
†Phylledestes. 1.
Total Lepidoptera. 13.

DIPTERA.

Asilidæ. 8.
Anthomyiidæ. 1.
Bibionidæ. 2.
Bombyliidæ. 8.
Cecidomyiidæ. (gall). 1.
* Glossinidæ. 2.
Leptidæ. 3.
Mycetophilidæ. 4.
Nemestrinidæ. 5.
Phoridæ. 2.
Platypezidæ. 1.
Ptychopteridæ. 1.
Sciomyzidæ. 1.
Stratiomyidæ. 1.
Syrphidæ. 3.
Tabanidæ. 2.
Therevidæ. 2.
Tipulidæ. 53.
Total Diptera. 100.

HETEROPTERA.

Belostomatidæ. 1.
Capsidæ. 13.
Coreidæ. 33.

§ The gall *Andricus myricæ* Brues, 1910, is the same as *Cecidomyia* (?) *pontaniiformis* Ckll., 1908.

Corixidæ. 4.
Hydrobatidæ. 1.
Lygæidæ. 47.
Notonectidæ. 1.
Pentatomidæ. 33.
Pyrrhocoridæ. 2.
Reduviidæ. 3.
Tingitidæ. 3.
Veliidæ. 2.
Total Heteroptera. 143.

HOMOPTERA.

Achilidæ. 1.
Aphididæ. 32.
Cercopidæ. 21.
Cicadidæ. 3.
Cixiidæ. 8.
Coccidæ. 1.
Dictyopharidæ. 1.
Fulgoridæ. 3.
Jassidæ. 11.
Psyllidæ. 3.
Total Homoptera. 84.

NEUROPTEROID SERIES.

Ephemerida. 7.
Embiidæ. 1.
Termitidæ. 7.
Meropidæ. 1.
†Eobanksiidæ. 1.
Panorpidæ. 3.
Raphidiidæ. 8.
Chrysopidæ. 6.
Hemerobiidæ (s. lat.) 3.
*Nemopteridæ. 1.
Æshnidæ. 5.
Agrionidæ. 11.
Trichoptera. 28.
Total Neuropteroid Series. 82.

ORTHOPTERA.

Acridiidæ. 7.
Blattidæ. 3.
Forficulidæ. 10.
Gryllidæ. 1.
Locustidæ. 8.
Mantidæ. 2.
Phasmidæ. 1.
Total Orthoptera. 32.

APTERA.

†Ballostoma. 1.
(? an insect larva.)
Lepismatidæ. 1.
Total Aptera. 2.
Total Insecta. 1052.

ARACHNIDA.

Acarina. 1.
Araneida. 31.
Phalangida. 1.
Total Arachnida. 33.

DIPLOPODA.

Julidæ. 1.

CRUSTACEA.

Ostracoda. 1.

TOTAL ANIMALIA. 1104.

A species of the Dipterous genus *Mydas*, representing an additional family (Mydaidæ), has been described and sent for publication.

The plants from the same beds cannot at present be listed so accurately as might be wished, owing to some outstanding questions of generic position, synonymy and locality. Using my best judgment, however, I find that the apparently valid described species include two fungi, two mosses, two Characeæ, one Isoetaceæ, five Polypodiaceæ, one Schizaeaceæ, seven gymnosperms, eleven monocotyledonous and 181 dicotyledonous plants. The so-called *Tmesipteris alleni* (Lx.) Hollick, although common, cannot be referred to any genus known to those who have examined it. It has nothing whatever to do with *Tmesipteris*, nor does it belong to *Salviniâ* or *Ophioglossum*, as placed by Lesquereux. It may be known for the present as *Carpolithes alleni* (Lx.).