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CONTRIBUTIONS TO CANADIAN PALEONTOLOGY

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CANADIAN FOSSIL INSECTS.

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4. *Additions to the Coleopterous fauna of the interglacial clays of the Toronto district. With an Appendix by A. D. Hopkins on the Scolytid borings from the same deposits.*

The occurrence of insect remains in interglacial beds at Scarborough, Ontario, was first made known by Hinde in 1877\* and a couple of species of Carabidae found in them by him were described by me in the same year.† Later additions to the fauna, due to the efforts of Dr. Hinde, were published by me at different times‡, and finally embodied, with additions, in the second paper of the present volume§, in which, including four species found by Dr. Hinde in very similar beds near Cleveland, Ohio, the total number of determined species was stated to be twenty-nine, referable to five different families,—Carabidae, Hydrophilidae, Staphylinidae, Chrysomelidae and Scolytidae. None of the species could be referred to living forms.

Since then, Professor A. P. Coleman has taken up the investigation of these beds, including new outcrops of the same deposit in the vicinity or within the limits of Toronto||, and has sent me a large mass of material, amounting in all to several hundred specimens, of which about one third were available by being sufficiently complete or characteristic. These are almost exclusively elytra of beetles and form the subject of the present paper; they consist of fifty-four species belonging to six different families, additional families being Dytiscidae, Gyrinidae and Curculionidae. Only seven of these fifty-four species have been found before in these beds, and all but two of the forty-seven additions are regarded, like those previously

\* Can. Journ. Sc., n.s. xv, 339.

† Bull. U.S. Geol. Surv. Terr., iii, 763-764.

‡ Can. Ent., xviii, 133-135 (1886); Proc. Bost. Soc. Nat. Hist., xxiv, 467-468 (1890); Tert. Ins. N.A., passim, pt. I (1890).

§ The Coleoptera hitherto found fossil in Canada, 27-56, pl. 2-3 (1892).

|| See his papers in Amer. Geol., xiii, 85-95 (1894); Journ. Geol. iii, 622-645 (1895); and Bull. Geol. Soc. Amer., x, 165-176 (1899); as well as the Reports of the Committee on Canadian Pleistocene Flora and Fauna (A. P. Coleman, Secretary) in the Reports Brit. Assoc. Adv. Sc., for 1898, 1899 and 1900.