

1906. [With JOHN T. STOBBS.] "A newly-discovered Fish Bed in the Cheadle Coalfield; with Notes on the Distribution of Fossil Fishes in that District": *Trans. N. Staffs. Nat. Field Club*, vol. xl, pp. 87-101, pl. i.
 "Palæontology of the Cheadle Coalfield": *loc. cit.*, vol. xl, pp. 102-137, pl. ii.

CAROLINE BIRLEY.

BORN NOVEMBER 16, 1851.

DIED FEBRUARY 15, 1907.

By the death of Miss Caroline Birley a most ardent and enthusiastic student has been lost to the science of Geology, one who from her childhood to the end of her life never wavered in devotion to this her cherished pursuit, nor thought any fatigue or personal sacrifice too great in order to visit places of geological interest and obtain specimens for her beloved Museum.

Caroline Birley was the youngest daughter of Mr. Thomas Hornby Birley, who resided at Hart Hill, near Manchester. When a child her holidays were constantly spent in the Isle of Man, where her grandfather, Lieut.-Col. Leatham, resided after his retirement from the Army. Her earliest delight was to select specimens of stones showing any peculiarity, and when about 9 years of age she commenced to form a collection, to which she continued most assiduously to add when travelling in England or on the Continent. When the GEOLOGICAL MAGAZINE commenced its existence in 1864 this young enthusiast of 13 years of age became a regular monthly subscriber, devoting her pocket-money to this periodical! After a year of self-denial her grandmother, discovering this sacrifice to the cause of geological science, made her granddaughter a special allowance to purchase this coveted journal.

In the year 1888 Miss Caroline Birley's collection had already outgrown the space in her house at Seedley Terrace, Manchester, and she erected an iron building in the garden as a museum. In 1888 Miss C. Birley visited Faxø, Denmark, and again in the Summer of 1891, when she made a large collection of Upper Cretaceous fossils. The Crustacea thus obtained were described by Dr. H. Woodward in the GEOLOGICAL MAGAZINE for November, 1901 (pp. 486-501, Pl. XII). Two new species of the genus *Dromiopsis* (*D. Birleyæ* and *D. Coplandæ*) obtained in that expedition were figured and described by him, and dedicated to Miss C. Birley and her friend and fellow-traveller, Miss L. Copland.

In June, 1889, Miss Birley and her friend Miss Copland visited the Færoes, bringing back from the islands of Stromøe, Naalsoe, and Osterøe six hundredweights of rocks containing zeolites. In 1890 she paid a second visit to the Færoes. In that year Miss Birley became a member of the Geologists' Association, to the excursions and meetings of which Society she was always afterwards a very constant attendant. She also, later on, in 1894, joined the Malacological Society of London, and frequently attended its meetings. In November, 1891, Miss Birley and Miss Copland went to Malta and did a considerable amount of collecting from the Tertiary strata of that island. In 1892 the ladies visited Algeria, but did not succeed in making a very large collection there.

In 1896 Miss Birley settled in London, taking up her residence at No. 14, Brunswick Gardens, Kensington, W., to which house she also transferred her museum.

Having joined the British Association at Manchester in 1887, Miss Birley regularly attended its subsequent meetings and always attached herself to the Geological Section and its excursions. In 1897 she went to Toronto with that body, and in a trip to Colorado obtained some excellent minerals. In 1899 a visit was paid to the Azores with the intention of collecting from the fossiliferous beds in Santa Maria, but insuperable obstacles intervened, and they were unable to reach that island from St. Michaels. In 1902 a collection was made from the Kimmeridgian and Oxfordian of the neighbourhood of Boulogne.

Miss Birley's last long expedition was to attend the British Association at Cape Town in August, 1905, accompanying it in all its travels as far as the Victoria Falls. In that year she placed in the hands of Mr. R. Bullen Newton, F.G.S., for description, a series of fossiliferous nodules from the beach off the Ormara Headland, facing the coast of Baluchistan in the Indian Ocean. These nodules, which contained numerous Tertiary mollusca, were figured and described in detail by Mr. Newton in the pages of the *GEOLOGICAL MAGAZINE* for July, 1905, pp. 293–303, Pls. XVI and XVII, to which Mr. Burrows added a notice of a Bryozoan (op. cit., pp. 303–305) with a text-figure; and Dr. H. Woodward described a new Crab (*Neptunus Arabicus*) and a group of *Balani*, of which he gave figures (op. cit., pp. 305–310).

A new genus and species of Crustacean, obtained by Miss Birley from the Gault of Folkestone in 1900, was described by Dr. H. Woodward under the name of *Mesodromilites Birleyæ* (see *GEOL. MAG.*, 1900, pp. 61–64, with text-figure).

Miss Birley spent very much of her time in the Geological and Mineralogical Galleries of the British Museum naming her specimens, upon the arrangement of which she spared no labour or expense. Last year she was far from well, but her courage was so indomitable that she attended the meeting of the British Association at York in August last. In the Autumn she had a severe illness, after which she never regained her usual strength; but she continued to arrange and label her more recent acquisitions, and retained her interest in her museum to the end. Her last addition consisted in a large slab of New Red Sandstone from the Stourton Quarries, Cheshire, with Labyrinthodont footprints upon its surface.

After a week's illness from influenza this ardent geologist succumbed to heart-failure on the 15th February, 1907. We believe she has given directions that the best specimens in her collection are to be presented to the Trustees of the British Museum, for the Geological and Mineralogical Collections of the Natural History Branch in Cromwell Road, with remainder to the Manchester Museum, in the Owen's College, Manchester.

Miss Caroline Birley was buried at Lingfield Church, Surrey, on Tuesday, the 19th February, near the home of her brother, Mr. Francis Hornby Birley.