fragments were exposed on the face of the section. Sir John Evans kindly informed me that he considered two of the flints to be artificially made, and probably of Neolithic date. The soft earthy capping of the cliff is about the same height as the highest beach deposits, but is clearly much more recent. The flints did not overlie the beach, but were to the eastward of the eastern end of the raised beach.

I see that Sir Archibald Geikie mentions the fact that the 20 foot terrace on the north-east coast of Ireland has *produced* many worked flints, regarded as Neolithic (Q.J.G.S., vol. lx, p. xcvi). These Hope's Nose flints are clearly more recent than the raised beach (about equivalent to a 24 foot terrace), and it is likely enough that they were made out of the flints which occur in the beach, but are not elsewhere found in the immediate neighbourhood. I am far from wishing to trouble your readers with any remarks of my own on this rather perplexing subject, but the mere fact of the discovery of Neolithic flakes newer than the adjacent beach at Hope's Nose, Torbay, may be worth a bare record. A. R. HUNT.

SOUTHWOOD, TORQUAY.
June 14th, 1904.

OBITUARY.

FRANK RUTLEY.

BORN MAY 14, 1842. DIED MAY 16, 1904.

THE son of a medical practitioner at Dover, Frank Rutley became early in life interested in geology, and studied at the Royal School of Mines from 1862 to 1864. In 1867 he was appointed an Assistant Geologist on the Geological Survey, under Sir Roderick Murchison and Professor Ramsay. For a few years he was engaged in field-work with W. T. Aveline in the Lake District. There he gave some attention to the subject of glaciation, but, probably through the influence of his colleague, the late J. Clifton Ward, he began to undertake the special study of rocks and rock-forming minerals. The importance of the microscope in the examination of rocks was at this period becoming recognized, and Mr. Rutley was transferred to the Geological Survey Office in Jermyn Street, to undertake the determination and description of the igneous rocks that were collected in the course of the geological survey; he took charge also of the rock-collection in the Museum of Practical Geology. His first official work dealt with the volcanic rocks of East Somerset and the Bristol district (1876), and he later on wrote special memoirs on the eruptive rocks of Brent Tor (1878), and on the Felsitic Lavas of England and Wales (1885).

He was author in 1874 of a small but exceedingly useful work on Mineralogy for Murby's "Science and Art Department" series of text-books, of which a twelfth edition was issued in 1900. In 1879 he wrote an elementary text-book of Petrology, the first work of the kind published in this country, entitled "The Study of Rocks,"

and illustrated by many of his own excellent drawings. Of this a second edition was issued in 1881. Later on in 1888 he published a work on "Rock-forming Minerals," and in 1894 "Granites and Greenstones: A series of Tables and Notes for Students of Petrology."

In 1882 Mr. Rutley was appointed Lecturer on Mineralogy in the Royal College of Science, a post which he occupied for about ten years, when he was unfortunately forced to retire through disablement by paralysis. For several years, so far as his strength permitted, he continued to work with unabated enthusiasm at petrological subjects; and until the end he never ceased to take great interest in his favourite studies. He was a man who in early life was endowed with great vigour, but his habits were somewhat erratic; he burned the midnight oil far too much, toiling into the early morning when he should have slumbered, and finding it difficult in consequence to conform to the regulations of official life; but he was a genial companion, full of dry humour, and ever ready to assist others. His published work shows how assiduous and painstaking he was, and the accompanying list gives the best idea of the special researches which he carried on for a number of years. He was awarded the Murchison Fund by the Council of the Geological Society in 1881, and later on he served for a few years as a member of the Council :—

1865. [Letter on a Subsidence at Lexden, in Essex]: Geol. Mag., Vol. II, pp. 231–2.
1870. [Letter on] Geology of the Lake District: ibid., Vol. VII, pp. 584–5.
1871. [Letter on] Glaciation of the Lake District: ibid., Vol. VIII, p. 93.
1873. "On a New Method of Writing Crystallographic Formulæ": ibid., Vol. X, pp. 299–301, 527–8.
1875. "Notes on some peculiarities in the Microscopic Structure of Felspars": Quart. Journ. Geol. Soc., vol. xxxi, pp. 479–487.
1876. "On some Structures in Obsidian, Perlite, and Leucite": Micr. Journ., vol. xv, pp. 176–183.
1877. "On Microscopic Structures in Tachylite from Slieve-nalargy, Co. Down, Ireland": Journ. Roy. Geol. Soc. Ireland, ser. II, vol. iv, pp. 227–232.
1879. "On Community of Structure in Rocks of Dissimilar Origin": Quart. Journ. Geol. Soc., vol. xxxv, pp. 327–340.
"On Perlitic and Spherulitic Structures in the Lavas of the Glyder Fawr, North Wales": ibid., pp. 508–9.
1880. "On the Schistose Volcanic Rocks occurring on the West of Dartmoor, with some Notes on the Structure of the Brent Tor Volcano": ibid., vol. xxxvi, pp. 285–294.
[Letter on] The term 'Schist': Geol. Mag., Dec. II, Vol. VII, pp. 239–40.
1881. "The Microscopic Characters of the Vitreous Rocks of Montana, U.S.A.": Quart. Journ. Geol. Soc., vol. xxxvii, pp. 391–399.
"On the Microscopic Structure of Devitrified Rocks from Beddgelert and Snowdon; with an Appendix on the Eruptive Rocks of Skomer Island": ibid., pp. 403–412.
"Visit to the Museum of Practical Geology [Rock Collection]": Proc. Geol. Assoc., vol. vii, pp. 114–15.
1884. "On Strain in Connexion with Crystallization and the Development of Perlitic Structure": Quart. Journ. Geol. Soc., vol. xl, pp. 340–346.
1885. "On Fulgurite from Mont Blanc; with a Note on the Bouteillenstein, or Pseudo-Chrysolite of Moldauthein, in Bohemia": ibid., vol. xli, pp. 152–156.
"On Brecciated Porfido-rosso antico": ibid., pp. 157–161.
[Letter on] The Enstatitic Lavas of Eycott Hill: Geol. Mag., Dec. III, Vol. II, p. 285.

1886. "On some Eruptive Rocks from the Neighbourhood of St. Minver, Cornwall": Quart. Journ. Geol. Soc., vol. xlii, pp. 392–400.
"The Igneous Rocks, etc., of the Neighbourhood of the Warwickshire Coal-field": GEOL. MAG., Dec. III, Vol. III, pp. 557–565.
1887. "On the Rocks of the Malvern Hills": Quart. Journ. Geol. Soc., vol. xliii, pp. 481–514.
1888. "On Perlitic Felsites, probably of Archæan Age, from the Flanks of the Herefordshire Beacon; and on the possible Origin of some Epidosites": ibid., vol. xliv, pp. 740–744.
1889. "On Fulgurites from Monte Viso": ibid., vol. xlv, pp. 60–66.
"On Tachylite from Victoria Park, Whiteinch, near Glasgow": ibid., pp. 626–632.
1890. "On Composite Spherulites in Obsidian from Hot Springs near Little Lake, California": ibid., vol. xlvi, pp. 423–428.
"On a Specimen of Banded Serpentine from the Lizard, Cornwall": Trans. Roy. Geol. Soc. Cornwall, vol. xi, p. 239.
[Notes on Anglesey Rocks]: Proc. Liverpool Geol. Soc., vol. vi, p. 2.
1891. "On a Spherulitic and Perlitic Obsidian from Pilas, Jalisco, Mexico": Quart. Journ. Geol. Soc., vol. xlvii, pp. 530–532.
"On some of the Melaphyres of Caradoc, with Notes on the Associated Felsites": ibid., pp. 534–543.
"Notes on Crystallites": Min. Mag., vol. ix, p. 261.
1892. "Note on Crystals of Manganite from Harzgerode": ibid., vol. x, pp. 20–1.
1893. "On the Dwindling and Disappearance of Limestones": Quart. Journ. Geol. Soc., vol. xlix, pp. 372–382.
1894. "On the Sequence of Perlitic and Spherulitic Structures: a Rejoinder to Criticism": ibid., vol. L, pp. 10–13.
"On the Origin of certain Novaculites and Quartzites": ibid., pp. 377–391.
"Note on a Zircon from Expailly, Haute Loire": Min. Mag., vol. x, p. 278.
"On Fulgurites from Griqualand West": ibid, p. 280.
"Note on some Inclusions in Quartz": ibid., p. 285.
1895. "On a Sandy Ironstone occurring above the Chalk at Capel, near Dover": GEOL. MAG., Dec. IV, Vol. II, pp. 227–229.
1896. "On the Alteration of certain Basic Eruptive Rocks from Brent Tor, Devon" (abstract): Quart. Journ. Geol. Soc., vol. lii, p. 66.
1899. "On a Small Section of Felsitic Lavas and Tuffs near Conway (Caernarvonshire)": ibid., vol. lv, pp. 170–175.
(With J. Park.) "Notes on the Rhyolites of the Hauraki Goldfields (New Zealand)": ibid., pp. 449–468.
1900. "Additional Notes on some Eruptive Rocks from New Zealand": ibid., vol. lvi, pp. 493–510.
1901. "On some Tufaceous Rhyolitic Rocks from Dufton Pike (Westmorland)": ibid., vol. lvii, pp. 31–37.
[Note] "On the Olifant Klip from Lydenburg and Ladysmith": GEOL. MAG., Dec. IV, Vol. VIII, p. 555.
1902. "On an Altered Siliceous Sinter from Builth (Brecknockshire)": Quart. Journ. Geol. Soc., vol. lviii, pp. 28–34.

MISCELLANEOUS.

BRIDLINGTON CRAG.—The fauna of the Bridlington Crag, described by Mr. G. W. Lamplugh in the GEOLOGICAL MAGAZINE for 1881, has always been of special interest to geologists.[1] The following account by Mr. Thomas Sheppard of recent excavations at Bridlington exposing this deposit will be of special interest to our readers.

Recently an opportunity has presented itself of examining the shell patches, and a party of geologists left Hull for an examination

[1] See also his letter in May No., p. 237.