(soaked up in powdered charcoal) as an explosive. These experiments have not fully determined the usefulness of this cheap explosive, the principal difficulty being that the mixture changes its composition rapidly as the nitrogen and oxygen evaporate.

The author suggests that the most promising field for liquid air machines is in their use for separating (partially) the oxygen from the large amount of nitrogen with which it is associated in the atmosphere.

ATMOSPHERIC ELECTRICITY.

AT last we have a reasonable theory of atmospheric electricity based upon facts. Elster and Geitel, and independently J. J. Thomson and C. T. R. Wilson, have applied the known properties of ionized gases to the explanation of atmospheric electricity. The sun's light, especially the ultra violet rays, ionizes the atmosphere producing equal numbers of positively and negatively charged ions. These ions are ordinarily present in equal numbers in dry air and their charges do not therefore develop any perceptible electric potential. When the air is cooled below its dew point, however, the negative ions mainly serve as nuclei upon which the moisture is condensed in drops which in falling remove the negative ions, leave an excess of positive ions; this excess of positive ions gives rise to very great electric potentials, and produces the electrical effects which accompany rain. The reasonableness of this theory is that every physical action which enters into it has been followed in the laboratory—the ionization of air by ultra violet light, the condensation of moisture on the negative ions, etc.

W. S. F.

CURRENT NOTES ON PHYSIOGRAPHY.

GLACIAL LAKES IN WESTERN NEW YORK.

FAIRCHILD has extended his studies of glacial lakes to the Finger lake district of western New York, and presents a comprehensive sketch of nineteen valleys in which such lakes were formed, several of them showing shore lines at successive levels (*Bull. Geol. Soc. Amer.*, X., 1899, 27–68). The southward overflows of the lakes, leading over passes between the hills of the Allegheny plateau to the different headwater streams of the Allegheny and Susquehanna rivers, are enumerated and figured. The eastward outlets, between the northern slope of the plateau and the retreating front of the ice, previously described by Gilbert and Quereau, are here beautifully illustrated; they prove to be even stronger topographic features than the channels of similar origin carved in the drift of eastern Michigan, as described by Taylor.

Reference should be made in this connection to a thesis on 'Some higher levels in the postglacial development of the Finger lakes of New York State,' submitted by T. L. Watson, a graduate student in Cornell University in 1897 (Rept. Director N. Y. State Museum, 1898, App. B, 65–117).

THE POMMERANIAN COAST-LAND.

DETAILS concerning the course of valleys formed by rivers marginal to the retreating ice of north Germany recently given by Keilhack (Die Stillstandslagen des letzten Indlandeises und die hydrographische Entwickelung des pommerschen Küstengebietes, Jahrb. k. preuss. geol. Landesanstalt, 1899, 90–152, 14 maps) supplement the general account referred to in SCIENCE for January 5, 1900. After the ice sheet had withdrawn from the morainic hills of the Pommeranian lake belt, twelve successive stages of constrained drainage are recognized and mapped, interrupted terminal moraines having been formed during some of the stages, and special conditions of marginal drainage having characterized every one of them. The important valleys eroded in the uplands by rivers marginal to the retreating ice are analogous to those above described, in the northern spurs of the Allegheny plateau of west central New York. If any one desires novel evidence of the former existence of land ice-sheets, and of their importance in fashioning, directly, or indirectly, existing geographical features, it may be found in abundance in the two districts here referred to.

GERMAN PHYSIOGRAPHIC TERMS.

A CHAPTER on the Earth's Surface, written by Penck for Scobel's 'Geographisches Handbuch zu Andrees Handatlas' (3d ed., 1899), presents

a compact epitome of the physiography of the lands, in which the German equivalents for a number of English terms may be found. The cycle of denudation (Umbildungscyklus) opens with initial forms (Urformen) produced in the large way by deformation (Grossformen, Strukturformen), such as masses of vertical movement (Schollenländer) with raised blocks and rift valleys (Horste, Graben), or folded zones (Stauungszone) with arches and troughs (Rücken, Thalungen). Destructive agencies carve the details (Kleinformen, Skulpturformen) of consequent and subsequent features (Folgeformen, Unterfolgeformen) such as are seen in regions of young and mature valleys (jugendliche, ausgereifte Thallandschaften). The diversion (Ablenkung) of one stream by another causes a migration of divides (Wanderung der Wasserscheiden) and results in an adjustment (Anpassung) of streams to structures; initial, consequent, and subsequent divides (Ur-, Folge-, Unterfolgescheiden) may therefore be recognized. As the valleys widen and consume the hills, old age (Alter der Landschaften) is reached, ending in a peneplain (Rumpflandschaft). It is possible to combine cycles of different stages (Stadien), the sequential forms (Skulpturformen) of the first cycle having served as the initial forms (Urformen) of the next. Some of Penck's terms, such as Schichtstufen, Schichtkammlandschaft, Durchbruchthal, have no simple equivalents in English.

LAKES OF THE BÖHMERWALD.

Eight small lakes occupy corrie-basins in the Böhmerwald. Their physical features are described and their origin is discussed by P. Wagner (Die Seen des Böhmerwaldes, Wiss. Veröffentlichungen, Verein f. Erdkunde, Leipzig, iv., 1899, 1–90, maps, sections and views). After a general consideration of the various theories as to the origin of corries (Karen, Cirques, Botner) through erosion by water, obstruction by rockfalls, and excavation by névé and ice, the author concludes that the best developed corries, with background of cliffs and rounded basin of clean-scoured rock, are valleys of preglacial erosion modified by snow and ice action during the glacial period.

W. M. Davis.

CURRENT NOTES ON METEOROLOGY.

DEATH OF MR. G. J. SYMONS.

Mr. George James Symons, who died in London on March 10th, was well known throughout the meteorological world as the founder and head of the British Rainfall Service. In 1857 he started an organization for observing and recording thunderstorms, and soon afterwards began his life work on British Rainfall, which he continued till his death. The observers co-operating in this undertaking now number between 3000 and 4000, and the results of the observations have been published annually in successive volumes, bearing the title *British Rainfall*. The first volume contained the records for the year 1860, and the fortieth is shortly to be issued. Mr. Symons occupied a unique position, that of a private individual in charge of a great meteorological service, which he himself built up and administered. In 1866 Mr. Symons began the publication of his *Monthly Meteorological Magazine*, to which reference has from time to time been made in these Notes. His name is further well known in connection with the meteorological section of the Royal Society's Report on the Krakatoa eruption, and with his valuable contributions to meteorological bibliography. He rendered important assistance in the preparation of the *Bibliography of Meteorology*, published by the U. S. Signal Service. Mr. Symons was a Fellow of the Royal Society, a member of the General Committee of the British Association, President of the Royal Meteorological Society, and for 27 years the Honorary Secretary of that Society. He was created a Chevalier of the Legion d'Honneur in 1891, and was selected by the Prince of Wales to receive the Albert Medal of the Society of Arts for 1897, "for services he rendered to the United Kingdom by affording to engineers engaged in the water supply and sewerage of towns a trustworthy basis for their work by establishing and carrying on during nearly 40 years systematic observations (now at over 3000 stations) of the rainfall of the British Isles, and by recording, tabulating, and graphically indicating the results of these observations in the annual volumes published by himself." Meteorology can ill afford to lose so unselfish a worker as Mr. George J. Symons.