

other genera, appear to be formed upon a single type, contributes naturally to the common opinion that the genus has few but much-varying species. In describing the Greenland forms, Prof. Agardh has endeavoured to show that besides the difference in form, deviations also occur which ought to be retained as characteristics. In a preceding memoir he had stated that the differences noticed by other algologists in the antheridia and spores being formed in the same or in separate receptacles may possibly be explained thus: namely, that in different seasons the receptacles differ in this respect. Should such an explanation prove to be erroneous, it will undoubtedly be seen that it is these differences, more than others, that deserve to be considered as the characteristics of species.

The reader who wishes for further information relative to the species of Algae inhabiting the Arctic seas is referred to the list of Arctic Algae in Harvey's *Ner. Bor. Americana*, and to Dr. Dickie's List of Algae obtained in Cumberland Sound (*Journal of Linn. Soc.* vol. ix.) Perhaps also some of the Algae collected by Dr. Lyall on the north-west coast of America, thirty-two of which had not been found elsewhere, may extend to the Arctic Sea. See Harvey's List of Algae, collected by Dr. Lyall, *Journ. of Linn. Soc.* vol. vi.

MARY P. MERRIFIELD,

SCIENTIFIC SERIALS

American Journal of Science and Arts, April.—The principal contents of this number are: The history of Young's discovery of his theory of colours, by Alfred M. Mayer. The aim of this paper is to give extracts from Newton, Young, and Wollaston, which embody the early literature of Young's celebrated theory of colour, and to furnish a history of the steps by which he was led to the adoption of what is now known as Young's theory of colour-sensation.—A re-determination of the constants of the law connecting the pitch of a sound with the duration of its residual sensation, by Alfred M. Mayer. This article refers to a previous article of October 1874 on the same subject. Since then, Madame Seiler (who assisted Helmholtz) and Dr. Carl Seiler have spent considerable time in re-determining the durations of the residual sonorous sensations, using Mr. Mayer's apparatus. From their experiments he has found the law given before as $D = \left(\frac{53248}{N + 23} + 24 \right) \cdot 0001$ requires to be modified to $D = \frac{3 \cdot 2}{N + 31} + \cdot 0022$, where D = the durations of the

residual sonorous sensation corresponding to N number of vibrations per second.—On the action of the less refrangible rays of light on silver, iodide, and bromide, by Carey Lea. The result of 160 very concordant experiments shows that AgBr and AgI are sensitive to all the visible rays of the spectrum. AgI is more sensitive than AgBr to all the less refrangible rays and also to white light. The sensitiveness of AgBr to the green rays was materially increased by the presence of free silver nitrate. AgBr and AgI together are more sensitive to both the green and the red rays than either AgI or AgBr separately.—On the Silurian age of the Southern Appalachians, by F. H. Bradley. First portion (to be continued).—Spectroscopic examination of gases from meteoric iron, by Arthur W. Wright. On the supposition that meteoric iron has received its hydrogen and other gases from the sun or some other body having a similar atmosphere of great density, it seemed probable that a spectroscopic examination might reveal the unknown gaseous elements assumed to be present in the solar corona. Only negative results were obtained. But the fact incidentally observed of the varying character of the oxygen and hydrogen lines in the presence of hydrogen, and the near coincidence of two of them with prominent coronal lines, with the possible coincidence of a third line, goes to show that the characteristic lines in the spectrum of the corona, so far from indicating the presence of otherwise unknown elements, are simply due to hydrogen and the gases of the air, oxygen and nitrogen.—On the duplicity of the principal star of Σ 1097, by S. W. Burnham.—The original notes under the head of Scientific Intelligence are: Progress of Geological Survey of Canada, 1873-74; the genera *Opisthoptera* (Meek, 1872) and *Anomalodonta* (Miller, 1874); the Gulf of Mexico in the Miocene time.

Der Naturforscher, Nos. 1 to 5, 1875.—This part contains many papers reprinted from other journals, besides several original contributions. We note the following:—On the physiological

action of amyl nitrite and the causes of blushing; investigations made by Herr Wilhelm Filehne, who found that amyl nitrite acts upon that part of the brain which is also acted upon when the individual has the feeling of shame and blushes. The most interesting part of the paper is the description of the effects of amyl nitrite upon animals; accelerated breathing and palpitations were the result, evidently similar to the physiological phenomenon in man. In the latter case, whether produced by the ether or by psychic emotion, the phenomenon is exactly the same.—Report on the Crustacea observed on board the *Challenger* between the Cape of Good Hope and Australia, in the Antarctic seas, by Willemoes-Suhm.—On the ascending currents of air in our atmosphere, by J. Hann.—On the finer structure of the electric organs of fish, especially of the species *Torpedo*, *Malapterurus*, and *Gymnotus*, by F. Bol.—On the point of combustion: a lecture delivered by A. Mitscherlich before the Chemical Section of the Association of Naturalists at Breslau.—On the fossil Cetacea of Europe, by J. F. Brandt.—On the diatoms of the coal age, by F. Castracane. The author succeeded in proving the existence of diatoms in a piece of Lancashire coal; it was powdered finely, and burnt in a stream of oxygen. The residue was treated with nitric acid and chlorate of potash, and then washed. The species he found were all sweet-water species, with the exception of a Grammatophora, a little *Coscinodiscus*, and an *Amphipleura*, and comprised the following:—*Fragilaria Harrii*, Sm.; *Epithemia gibba*, Ehrbg.; *Sphenella glacialis*, Kz.; *Gomphonema capitatum*, Ehrbg.; *Nitzschia curvula*, Kz.; *Cymbella scotica*, Sm.; *Synedra vitrea*, Kz.; and *Diatoma vulgare*, Bory.—On the Chastopoda of the Atlantic, by E. Ehlers; account of the results of a collection made on board the *Porcupine* in 1869.—Studies on the diameter of the sun, by P. Rosa. These studies were published after the death of the author, by Fathers Secchi and Ferrari, and contain many interesting details which are well worth the attention of astronomers.—On the absorption spectra of some yellow vegetable colouring matters, by N. Pringsheim. The result of these investigations seems to be that these colouring matters are merely modifications of chlorophyll, and that there exist numerous modifications of this substance, from the brightest yellow to the darkest green.—On the influence of the concentration of blood upon the motion of the blood-corpuscles.

SOCIETIES AND ACADEMIES

LONDON

Physical Society, May 8.—Prof. Gladstone, F.R.S., president, in the chair.—Mr. Crookes, F.R.S., exhibited and described some very important experiments on attraction and repulsion resulting from radiation, which he has recently submitted to the Royal Society, and of which an account has already been given in this journal (vol. xi. p. 494). It is unnecessary therefore to describe them at length, but it may be pointed out that the most beautiful of the instruments is one which Mr. Crookes calls a radiometer. It consists of four arms suspended on a steel point resting in a cup so that they are capable of revolving horizontally. To the extremity of each arm is fastened a thin disc of pith, lampblack on one side, the black and white faces alternating. The whole is enclosed in a glass globe, which is then exhausted as perfectly as possible and hermetically sealed. Several of these instruments varying in delicacy were exhibited, and experiments made showing the influence of light and heat of different degrees of refrangibility, and in proof of the law of inverse squares, &c.—The President, in expressing the cordial thanks of the Society, referred to Mr. Crookes' statement that the repulsion was proportional to the length of the vibrations, and asked whether at the red end of the spectrum there was an abrupt termination of the action, and a gradual diminution towards the ultra violet.—Mr. Walenn inquired as to the action of the magnet and of different axes of crystals in causing repulsion.—Prof. Woodward made some observations with reference to the manipulation.—Prof. Guthrie paid a graceful compliment to Mr. Crookes' work, and observed that researches might be divided into two classes; those in which the value of the work outweighed the merit of the author, and those in which a result of comparatively trifling significance is the outcome of years of patient labour. He expressed a strong conviction that Mr. Crookes' research had, in an almost unparalleled degree, both elements of greatness.—Mr. Crookes stated, in reply to Dr. Gladstone's question, that the glass envelope of the radiometer