

THE mayor of Brighton, in a circular, quoted in the *London Times*, accompanying his invitation to attend a meeting to consider a proposal to establish a university at Brighton, says that by adopting the scheme suggested by Mr. Clayton, a member of the Education Committee, at the mayoral banquet last month, a university education would be brought within the reach of residents in Sussex who may prefer that their sons should receive university education within reach of their own homes. The Brighton Technical College and the new Training College provide a nucleus around which the scheme could be developed. It is suggested that there might be affiliation with the colleges at Portsmouth and Southampton to constitute a new university for the south coast, or that the present radius of the University of London should be extended to include the proposed new University College.

THE Rev. T. A. BENDRAT, of Turners Falls, Mass., has been appointed instructor in the department of geology at the University of North Carolina, his appointment taking effect on January 4, 1912.

ASSOCIATE PROFESSOR WILLIAM LLOYD EVANS has been made professor of general chemistry in the Ohio State University. The chemical department of the Ohio State University now consists of Professor William McPherson, head of the department, in charge of organic chemistry, and also dean of the Graduate School of Ohio State University; Professor William E. Henderson, professor of inorganic and physical chemistry; Professor Charles W. Foulk, professor of analytical chemistry; Professor William L. Evans, professor of general chemistry; Dr. James R. Withrow, associate professor of chemistry in charge of industrial and applied electro-chemistry; David R. Kellogg, instructor in general and physical chemistry, and Dr. John A. Wilkinson, instructor in analytical chemistry; together with six assistants and nine instructing fellows. There are in addition on the campus in separate buildings the department of agricultural chemistry and the laboratories of metallurg-

ical chemistry, ceramic chemistry and pharmaceutical chemistry, including seven professors, one associate professor, four assistant professors and several instructors.

THE following have resigned their positions in Macdonald College, Province of Quebec: Mr. F. C. Elford, poultry instructor and manager, to take charge of the Educational Bureau of the Cyphers Incubator Co., Buffalo, N. Y.; Mr. J. M. Swaine, lecturer in biology, appointed assistant entomologist of the Dominion Experimental Farms in charge of work on forest insects; Mr. W. H. Brittain, assistant in biology, appointed assistant botanist of the seed division, Dominion Department of Agriculture; Mr. W. B. Cooley, assistant in animal husbandry, to go into private business in British Columbia. The following appointments have been made to the staff of the college: Mr. W. P. Fraser, M.A., Pictou, N. S., lecturer in biology; Mr. W. J. Reid, B.S.A., assistant in animal husbandry.

DR. J. H. BONNEMA, curator of the museum at Delft, has been called to the chair of geology at Groningen, to succeed Professor Van Kolker, who retires from active service.

DISCUSSION AND CORRESPONDENCE

ASTRONOMICAL REFERENCES IN TEXT-BOOKS ON PHYSICS

A SHORT time ago, having occasion to look into the treatment, given in some text-books on physics, of Roemer's method of determining the velocity of light, I was surprised to find a strange lack of information upon some simple definitions and well-known facts of astronomy. Thinking it well to call attention to this matter, I give below quotations from several books.

Glazebrook, "Light" (1894), pages 21 and 22: "Roemer discovered in 1656 that it travels with definite velocity." "... the period between two successive eclipses is known and is found to be 48 hours 28 minutes 35 seconds."

Jones, "Lessons in Heat and Light" (1892), page 197: "It happens that one of Jupiter's satellites (or moons) passes into the shadow of the planet at regular intervals (48½ hours), and is thus eclipsed."

Ames, "Theory of Physics" (1897), page 398: ". . . when the satellite will disappear behind Jupiter, *i. e.*, be eclipsed."

Watson, "A Text-book of Physics" (1899), page 505: ". . . when Jupiter and the earth are nearest together (at conjunction), and that which occurs when they are at their greatest distance (opposition)."

Rowland and Ames, "Elements of Physics" (1900), page 172: ". . . and so, if the eclipses of a satellite behind a planet's disc. . ."

Eggar, "Wave-motion, Sound, Light" (1901), page 504: ". . . the times of eclipse of one of the moons, *i. e.*, the instants at which it should pass behind the planet and emerge from his shadow."

Crew, "Elements of Physics" (1906), page 311: "Jupiter has five moons, one of which is larger and brighter than any of the others, and is called the 'first satellite.'" See also "General Physics" (1908), page 429.

Henderson and Woodhull, "Elements of Physics" (1906), page 290: "The eclipse was seen while the earth and Jupiter were on the same side of the sun—as the astronomers say, 'in conjunction'—the time was 16' 36" earlier than when the earth and Jupiter were on opposite sides of the sun; that is 'in opposition.'"

Millikan and Gale, "A First Course in Physics" (1906), page 388: "Roemer was making observations on the largest and brightest of Jupiter's seven moons." "Roemer first determined the interval between two successive eclipses, . . . and found it to be 48 hr. 28 min. and 36 sec."

Gage, as revised by Goodspeed, "Principles of Physics" (1907), page 276: "He made observations on that one of the five of Jupiter's satellites which is nearest to the planet."

Duff (editor), "A Text-book of Physics" (1908), page 339: ". . . when Jupiter and the earth are in conjunction, or on the same side of the sun and in line with it." ". . . at opposition, when the earth is on the opposite side of the sun from Jupiter."

Leaving out of consideration the number of Jupiter's satellites at any date, each of the above quotations has one error and some of them two. In many books it is stated that Roemer found the time for the light to cross the earth's orbit to be 16 min. 36 sec. This is nearly the present accepted value, while that

deduced by Roemer was considerably greater, some 22 min.

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AIR IN THE DEPTHS OF THE OCEAN

TO THE EDITOR OF SCIENCE: With reference to the communications appearing in the issues of August 25 and October 27 in relation to "air in the depths of the ocean," while it is erroneous to hold that the amount of dissolved gas is dependent upon hydrostatic pressure, yet the gas content of the bottom waters may be greater than the gas content of the surface waters because of the greater solubility of the gases at the low temperatures prevailing in the depths of the ocean. Sea water contains, in proportions varying widely with circumstances, four gases—oxygen, nitrogen, carbonic acid and argon. The oxygen decreases and the carbonic acid increases with increasing depth; but there is a respiratory process in operation by which the carbonic acid ascends by diffusion right up to the surface, while the oxygen by the same means makes its way to the bottom. This allows us to understand how the supply of oxygen, which is indispensable to the life of the animals everywhere existing in the depths of the ocean, is renewed even down to the bottom and an exchange made between the carbonic acid gas produced by their respiration and the oxygen coming from above.

G. W. LITTLEHALES

CONTAGIOUS ABORTION OF CATTLE

TO THE EDITOR OF SCIENCE: In a recent number (October 13) Director H. L. Russell, of the Wisconsin Agricultural Experiment Station, announces the discovery of the fact that the contagious abortion of cattle in this country is identical with that of Europe, and due to the *B. abortus* of Bang. Professor Russell apparently regards the investigations carried out at the Wisconsin Station since May, 1911, as the first creditable bacteriological work upon this subject in this country, and his communication would seem to cast some doubt upon the accuracy of the observa-