

was the issue between my view of tuberculosis communicated from the cow and the view which Dr. Carpenter has been expounding, and I hope you will have room for the passage:—
 “The doctrine of a tuberculous virus was stated by Klebs in 1868, and has been advocated by him, as well as by Cohnheim, in recent writings. In its latest form this doctrine asserts the existence of a specific minute organism to whose agency the infection is due. The minute organism is called by Klebs *Monas tuberculosum*. The method of proof which I have followed in this work makes it impossible that the infective agency of a minute organism should in any way come into my view of the communication of bovine tuberculosis to man. I have rested the whole case upon certain minute identities of form and structure in the infected body, due to the mimicry of infection. Among other points there were the leaf-like and cord-like outgrowths of the pleura and peritoneum, these being the early stages of the lentil-like or pearl-like nodules and their connecting threads; the lymphatic glands, with distinct nodular formations in their substance; the lungs, with smooth-walled closed vomicae or with encapsuled nodules. In the new formations generally there was a particular pattern of microscopic structure, in which giant-cells and epithelial-like cells figure largely, and there was a relatively high degree of vascularity. In all these points the disease in man is a mimicry of the parent disease in the bovine animal. That mimicry is not only in single features, but it is of the whole disease. It is possible to conceive of the juices and particles of the primarily diseased body acquiring a kind of spermatic virtue which gave them the power to communicate the specific disease as a whole and in all its several manifestations to another body in which they should happen to lodge. But it is hardly possible to think of a neutral living organism being charged with the power of conveying so complex details of form and structure from one body to another” (“Bovine Tuberculosis in Man,” pp. 103, 4).
 25, Savile Row, W., October 24 C. CREIGHTON

A Kinematical Theorem

PROF. MINCHIN'S Theorem in NATURE (vol. xxiv. p. 557) may be proved easily by considering the motion as due to the rolling of one closed curve on another back into its first position, their lengths being of course commensurable. If you measure y for the rolling curve from the straight line which forms the envelope, and x along that line, then the differential of the area between the envelope and the fixed curve is easily seen to be $y dx + \frac{1}{2} y^2 d\omega$, where $d\omega$ is the angle turned through by the rolling curve, and is equal to ds multiplied by the sum of the curvatures at the point of contact, which we shall call σ . The summation of the former part is a multiple of the area of the rolling curve, and therefore the same for all lines; that of the latter is half the moment of inertia of matter distributed over its perimeter with density σ , about the line in question. The result is therefore the well-known property of equi-momented ellipses. Similar reasoning, with the use of the property of the centre of inertia of a system, leads to the further result that when the perimeter of the envelope is of constant length, the line touches a circle, and different values of the constant correspond to concentric circles. In the same way by a property of the centre of inertia we may also prove immediately the known theorem that when the area traced out by a point is constant, the point lies on a circle, and different values of the constant correspond to concentric circles; and we may extend it to areas traced on a sphere.

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JOSEPH LARMOR

IF Prof. Minchin will refer back to the *Bulletin des Sciences Mathématiques et Astronomiques* for August, 1878, he will, I think, find in a paper by M. Darboux the theorem stated by him under the above title in NATURE, vol. xxiv. p. 557.

C. LEUDESORF

Pembroke College, Oxford, October 21

“The Dark Day”

REFERRING to the account of the phenomenon in New England on September 6 last (NATURE, vol. xxiv. p. 540), and in Mr. Harding's letter (p. 557), let me refer your readers to a succinct account of the occurrence on May 19, 1780, which they will find in Webster's Dictionary, “Explanatory and

Pronouncing Vocabulary of the Noted Names of Fiction, &c.” In *Public Opinion* (June 4, 1881) there is an account of a precisely similar occurrence on the morning of Sunday, November 8, 1819, known, it is remarked, as the “Phenomenon of 1819.” The account of this phenomenon is very explicit, and the details furnished correspond so closely with the event of May 19, 1780, that a doubt might be felt whether there had been two such days, or whether there had not been some mistake made in regard to the date given. I wrote to *Public Opinion*, making inquiries (see *Public Opinion* of June 11, 1881, p. 755), but no reply has hitherto appeared to my inquiries. I may observe that the year 1819 would not coincide with any one of the sun-spot cycle of eleven years from 1780 to which the New York *Nation* refers.
 A. TREVOR CRISPIN
 6, Melbury Terrace, Harewood Square, N.W., October 22

OWENS COLLEGE SCIENCE AND LITERATURE FELLOWSHIPS

THE first award of these Fellowships, of the annual value of 100*l.* each, which are intended to encourage original investigation, was made on Friday last by the Council of the Owens College. These are remarkable as being the only fellowships given in any University or College in the United Kingdom solely for the encouragement of research. They are not awarded on the results of examination, but after consideration of documentary or other evidence. Every holder of a fellowship is expected to devote his time to the prosecution of some special study, and before the close of the year to give evidence of progress by the preparation of a thesis, the delivery of a lecture, or the completion of some research. He may also be called upon to render some service to the College either by acting as occasional examiner or by giving instruction by lectures or otherwise to the students.

Of the thirty candidates four gentlemen were elected to Fellowships. Of these one is awarded to Mr. Alfred Sidgwick, B.A. of Lincoln College, Oxford, in the Department of Logic; two were awarded in the Department of Chemistry, namely, one to Dr. Bohoslav Brauner, of the University of Prague, who has already published several papers on original subjects, some from the laboratory of the Owens College; and a second to Mr. Harry Baker, Dalton Chemical Scholar of the College, who has likewise published several papers in the *Journal* of the Chemical Society. These two gentlemen will continue their researches, devoting the whole of their time to original investigation. In the Department of Biology an award has been made to Mr. H. Marshall Ward, B.A., F.L.S., of Christ College, Cambridge, at one time a demonstrator in the Owens College, who has recently distinguished himself as Government cryptogamist in Ceylon, in an investigation of the cause of the coffee disease.

THE AGE OF THE IGNEOUS ROCKS OF ICELAND

DURING a recent visit to the south-west part of Iceland, one or two points connected with the general geological structure of the island came under my observation, which I do not remember to have seen noticed before, and which seem to me to be of sufficient interest to be put on record. It is well known that the rocks of the island are of very different ages, some going back to the Miocene period, while others are quite of yesterday's date. It is also perhaps a general belief that the volcanic forces may have continued to be more or less active from the time that the older Miocene basalts and tuffs were erupted down to our own day. I doubt very much whether there is any evidence to justify this conclusion, and will presently mention some of the facts which lead to a very strong suspicion that a prolonged period of repose supervened after the accumulation of the Miocene rocks, and before the eruption of the later lavas, &c., had begun. The Miocene group consists of a vast