

### Surgeon Parke on Vaccination.

At the great banquet of welcome given in London to Surgeon Parke, he briefly referred to the inestimable benefit of vaccination. Before the expedition started for Africa, says the *Medical News*, he vaccinated nearly every man in Stanley's little army, with the result that when they were surrounded by small-pox there were only four cases among the members of the expedition, none of which proved fatal. But among the camp-followers and irregulars, who had not been vaccinated, small-pox was almost universal, and large numbers of them died. It is probable that without the precaution of vaccination the expedition would never have had strength to complete the march across Africa.

### LETTERS TO THE EDITOR.

\*.\* Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

The editor will be glad to publish any queries consonant with the character of the journal.

On request, twenty copies of the number containing his communication will be furnished free to any correspondent.

### Wind-Systems.

THE remarks on the general wind-systems of the globe on page 80 of *Science* for Aug. 8 are interesting. I have been securing from various mathematicians and meteorologists numerical statements of the deflective force of the earth's rotation on moving bodies on its surface. No two such statements thus far secured agree with each other or correspond with the deflection of air-currents actually depicted on the weather maps. As I understand the communication above mentioned, there is substantial agreement on the basis of the reasonings there presented that there is neither eastward nor westward movement of the atmosphere at latitude  $35^{\circ} 16'$ . It is true that the south Atlantic anti-cyclone is located at nearly this latitude, and is quite persistent. But the other anti-cyclones of the northern hemisphere, with reference to which alone we have full information, are not located at this latitude. On the contrary, they form a belt, not about the geographical pole, but about a point situated twenty degrees from it at longitude  $96^{\circ}$  west. In consequence of this displacement the centre of this belt is found as far north as  $55^{\circ}$  in the eastern hemisphere. Moreover, the separate anti-cyclones constituting it have a decided tendency to move eastward. Even the south Atlantic anti-cyclone pushes eastward not unfrequently at all seasons, and either fragments are detached from it or it moves bodily across Europe. At certain seasons this easterly movement of anti-cyclones is rapid, and at times appears to be independent of surrounding cyclones. This would seem to be a feature of the circulation of the atmosphere that is not consistent with the assumption that there is absence of eastward or westward movement at latitude  $35^{\circ} 16'$ .

M. A. VEEDER.

Lyons, N.Y., Aug. 13.

### On the Lack of the Distance-Sense in Prairie-Dogs.

SEVERAL individuals of various ages under observation at Cornell University walked off chairs, tables, and window-sills with nearly equal absence of hesitation. This deficiency of a faculty which is so conspicuous with squirrels and some other rodents may be ascribed to the nature of their usual habitat, a plain, in which the only sharp inequalities may be the burrows and mounds of their own making.

One adult female, however, has manifested an immunity from the ill effects of falls which is not easily accounted for, and may be worthy of record. When about three years old it fell down a shaft upon the wooden top of an elevator 6.6 metres (21.6 feet) below. For a few minutes it remained nearly motionless, as if stunned, but gradually revived and completely recovered. On the 14th of July, 1890, at the age of  $7\frac{1}{2}$  it fell an equal distance from a window-sill upon a broad granite step. On looking out, it could not be seen; closer inspection revealed a single spot of blood, and, at the foot of the steps, a hole into which, presumably, it had crept, and from which, four days later, it was coaxed, a little wild but apparently uninjured. These two survivals are notable in

view of the peculiarly solid and "chunky" form of the animal, and the improbability that such accidents should occur in a wild state. By allowing it to fall into water or upon soft material it is intended to observe the attitude during descent. The sense of distance may be cultivated. The brains of prairie-dogs will be compared with those of squirrels.

The subject of this note is 30 centimetres (12 inches) long, the tail contributing 6 centimetres; it is fat, and weighs 755 grams (26.6 ounces); the writer does not know the ordinary size and weight. It is friendly to all, but recognizes familiar voices and hands; is practically omnivorous, drinks milk, and has killed and devoured a ruffed grouse. Like all of the species, to a sudden sound, the fall of an object, a rap on the door, the voice, a cough, and particularly a sneeze, it responds by erecting the body and barking. The nervous mechanism involved seems to be largely reflex, rapidly exhausted, but nearly or quite uncontrollable; indeed, there is reason to believe that the second fall was due to an unguarded erection of the body at the edge of the window-sill; the bark was heard at the striking of a large clock in the same tower, and when the occupant of the room turned the dog had disappeared. Do any other animals display this reflex responsiveness to sounds?

As a slight contribution to the mechanism of dreams it may be added that the second fall and disappearance occurred during the writer's absence; that he is much attached to the prairie-dog, and promptly sent directions to search for it, urging that the steps should be removed if necessary; and that the following night he dreamed of superintending the demolition of McGraw Hall; finally that neither to him nor to any others connected with the university did their appear any incongruity in the destruction of a fifty-thousand-dollar stone building for the recovery of a prairie-dog.

BURT G. WILDER, M.D.

Ithaca, N.Y., Aug. 16.

### Ballooning of Spiders.

McCook's great work on "American Spiders," whilst properly rejecting some proposed explanations of their aeronautics, does not offer any better explanation, but merely speaks of ascending air-currents, and gives important observations which show that the point of departure is an exposed rail fence or other elevated place in sunshine. I would suggest that the explanation is to be found in the fact that sunshine on such departure-platforms causes an upward current by heating and rarifying the air, and so starts the flight; and when (often after several vain attempts) the gossamer-line is at length sent aloft, the sunshine on the line itself will warm and rarify the surrounding lamina of air, and so increase the ascending current as to carry upwards both the filament and the suspended spider. For this last point I am indebted to Professor C. S. Young.

If these suggestions be good, then the interesting aeronautics may be expected to occur only during sunshine, and the term "ballooning" will not be entirely metaphorical, save in the sense that the rarified gas is outside instead of inside the silk mechanism.

F. MACLOSKEY.

Princeton College, N.J., Aug. 18.

### AMONG THE PUBLISHERS.

THE index for the September number of the *Chautauquan* shows the following inviting subjects: "On the Nature and Value of Folk Lore," by L. J. Vance; "Sacred Trees," by Dr. Ferd. Adalb. Junker von Langegg; "The Supreme Court of the United States," by Eugene L. Didier; "Experiment Stations: What is an Investigation?" by Byron D. Halsted, Sc.D.; and "Modern Magic and its Explanation," by Marcus Benjamin, Ph.D.

—E. & F. N. Spon announce a treatise on "Water Supply, Drainage, and Sanitary Appliances of Residences," including lifting machinery, and lighting and cooking apparatus, by Frederick Colyer; "Sewage Disposal," being fourteen years' experience in works of intermittent downward filtration, separately and in combination with surface irrigation, with notes on the practice and results of sewage farming, by J. Bailey Denton (second edi-

tion, with additions); and "Drainage with Regard to Health, and Modes of Disposal of Town Sewage," by George J. C. Broom, F.G.S.

—Messrs. D. Appleton & Co. announce that the third volume of McMaster's "History of the People of the United States" is now well advanced, and will be published probably in the course of the winter. It will be remembered that the second volume closes with the negotiations regarding the Louisiana purchase. In the new volume, which will contain eight chapters, Professor McMaster begins with the debate in the House regarding the constitutionality of the Louisiana purchase, and he closes the volume with a discussion of the political and economic effects of the War of 1812.

—Ginn & Co., publishers, announce as in preparation "Allen and Greenough's Ovid," revised edition, edited by Harold N. Fowler, Ph.D., instructor in Latin in Phillips Exeter Academy; with a vocabulary by James B. Greenough, professor of Latin in Harvard University, which is intended to be of the same character as vocabularies to Virgil, Cæsar, etc., by the same author. The editor believes that the poems of Ovid are, as regards both style and subject matter, better adapted than those of Virgil to serve as an introduction to the study of Latin poetry. He therefore intends to furnish the book with copious notes suited to the needs of young students, which will be supplemented by grammar references and an introduction on the life and works of Ovid and on mythology. The selections are taken mainly from the "Metamorphoses," and are chosen with a view to making the study of Latin interesting. The value of the book will be greatly enhanced by the addition of the vocabulary.

—Among the books in press announced by the J. B. Lippincott Company are "The Distribution of Wealth," by Rufus Cope; "Hermetic Philosophy," by J. S. McDonald, author of "Vital Philosophy," etc.; "The German Soldier in the Wars of the United States," by J. G. Rosengarten (second edition, revised and enlarged); "Regional Anatomy in its Relation to Medicine and Surgery," by George McClellan, M.D., illustrated from photographs taken by the author of his own dissections, expressly designed and prepared for this work, and colored by him after nature (this last-named work is to be sold by subscription only); and "Historic Note-Book," by the Rev. E. Cobham Brewer, LL.D., Trinity College, Cambridge, author of "The Reader's Hand-Book," "Dictionary of Phrase and Fable," etc.

—In the early summer of 1889 a circular-letter was issued to the working entomologists of the country, offering prizes for essays containing original investigations regarding methods of destroying the mosquito and the house-fly. The object of this effort was to bring about an intelligent discussion of the question, What natural enemies of these irritating insects may be easily and efficiently arrayed against them? The voracious and harmless dragon-fly, of which our country supplies so many beautiful varieties, was especially designated as possessing qualities that made it a promising subject for careful investigation. The plan of destruction thus sought for is that so commonly observed in operation upon a grand scale in nature, where individual species and whole families are swept out of existence through its operation. The questions formulated in the circular-letter were widely discussed. Newspapers and other periodicals treated them from a hundred standpoints; a volume could be filled with articles relating to the subject published in this country and in Europe. The most valuable results were, as expected, those submitted by the scientific experts especially appealed to. The essays that they presented are the outgrowth of long years spent in rearing insects, studying their transformations and habits, and of extensive special reading. These essays were found so full of valuable scientific and popular information that the recommendation of the distinguished judges acting under the terms of the circular letter, to place them in a printed form before the public, has been complied with in the volume "Dragon-Flies versus Mosquitoes," published by D. Appleton & Company. An article contributed by Dr. McCook to the *North American Review* is reproduced with especial view to his observations on mosquito-catching spiders. Captain Macauley, of the United States Army, furnishes an interesting chapter of his experience among the

dragon-flies and mosquitoes of the upper Missouri. The book is illustrated with colored and other plates.

—Among other articles, the *Westminster Review* for August contains the following: "Mr. Stanley's New Book;" "Lunacy Law Reform;" "Life in Achill and Aran," by Michael MacDonagh; "Cremation at Milan," by H. Sutherland Edwards; "Divorce: Does Scripture Forbid It?" by A. P. Richards; and "The New Educational Code: Will it Work?" by Joseph J. Davies. The *Scottish Review* for the same month contains "Canada and the United States," by J. G. Bourinot; "Traces of a Non-Aryan Element in the Celtic Family," by Professor J. Rhys; "Bikelas on Scotland," by J. S. Blackie; "The Interpretation of the Critical Philosophy;" "Oriental Myths and Christian Parallels," by Florence Layard; "Odd Foods," by Alfred J. H. Crespi; "The Cession of Heligoland," by Andrew T. Sibbald. In the *Nineteenth Century* for August are to be found "The Value of Africa: a Reply to Sir John Pope Hennessy," by H. H. Johnston; "On the Rim of the Desert," by E. N. Buxton; "The Power of Suggestion," by A. B. McHardy; "Primitive Natural History," by Geo. J. Romanes; "The American Silver Bubble," by Robert Giffen. The *Contemporary Review* this month has an illustrated article on "Christ among the Doctors," and an article on "Women and the Universities." Other articles are "How British Colonies Got Responsible Government," by Sir C. G. Duffy; "The National Home Reading Union and its Prospects," by J. C. Collins; "The Shetland Isles in the Birds'-Nesting Season," by T. Digby Pigett; "Illustrated Journalism," by Carmichael Thomas; "The Prehistoric Races of Italy," by Canon Isaac Taylor; "The Nihilisms and Socialisms of the World," by J. Page Hopps; "The Organization of Unskilled Labor," by R. Spence Watson; "A Defence of University Lectures," by Professor William Knight; and "Britain Fin de Siecle," by Frederick Greenwood. The *Fortnightly* has articles on "The Latest Discoveries in Hypnotism," by Dr. J. Luys; "The Stronghold of the Sphakiotes," by James D. Bouchier; "Ethics and Politics," by Sir Rowland Blennerhassett; "Labor Disputes in America," by Dr. W. H. S. Aubrey; "The Educational Outlook," by the Rev. J. R. Diggie; "Armenia and the Armenian People," by E. B. Lanin; and "War in the Future," by Col. W. W. Knollys.

—Bulletin No. 22 of the United States Department of Agriculture comprises the reports of the field agents of the Division of Entomology which were necessarily omitted from the annual report. Although Mr. Coquillett has reported upon several phases of his work, the Bulletin gives only the portion relating to the experiments which he made in the destruction of the red scale of California (*Aspidiotus aurantii* Maskell) by the use of washes. A portion of his report relating to experiments with gas treatment for this scale insect, resulting in the great cheapening of the use of this process, was printed in *Insect Life* for January and February, 1890. Another section of his report, relating to the attempted colonization of the insects preying upon *Icerya purchasi*, imported by Mr. Koebele from Australia, was published in part in *Insect Life* for October, 1889, and the remainder is reserved for future use. The experiments with washes were undertaken with a view of presenting a practical illustration of their utility to the fruit-growers of southern California, who had apparently ignored the previous results obtained and published in the reports for 1886 and 1887. The red scale was particularly chosen on account of its importance as a pest, and for the further reason that the fluted scale seems at present to require no further experimentation, since the vedalia is overcoming it so rapidly. Professor Osborn, we learn from the Bulletin, has taken up the study of insects injurious to grasses, in addition to his regular work upon the insect parasites of domestic animals, and reports upon the leaf-hoppers injuring forage plants. This is a comparatively new and important field of investigation. Professor Webster continues his studies of grain insects, and reports upon certain points connected with the economy of a few well-known pests. Miss Murtfeldt sends in a general report upon the insects of the season in eastern Missouri, brings out a number of interesting facts, and gives the life history of a beetle injuring spinach, and also the histories of two interesting saw-flies. Mr. Koebele during the

latter part of the season did considerable field work, and reports upon a number of injurious species. Perhaps the most interesting feature of his report is his work upon the enemies of the codling moth in California. He has reared four entirely new parasites of this species, two of which are primary and two secondary. The egg parasite seems to be a very important feature in the life of the codling moth on the Pacific coast, and we know from previous experience with egg-parasites of the same genus that they are capable of very rapid development, and are consequently very beneficial insects where they attack injurious species. Professor Bruner treats of the insects of the year, and enters upon the consideration of insects detrimental to the growth of young trees on tree claims in Nebraska and other portions of the West, an important subject which has not before received treatment.

—No. 12 of Blakiston's (Philadelphia) series of "Quiz-Compend" has just been published. These compends are based on popular text-books and the lectures of prominent professors, and are kept constantly revised, so that they represent the present state of the subjects upon which they treat. The one now before us, No. 12, "A Compend of Equine Anatomy and Physiology," by Professor William R. Ballou, supplies for students of veterinary anatomy and physiology a work which will answer their needs not only as a text-book, but also for work in the dissecting-room. In its preparation the standard work of Chauveau has been followed in the main, though the works of Strangeways, Gray, and Quain have also been consulted. The work is illustrated with twenty-nine engravings, selected for the purpose from Chauveau's "Comparative Anatomy."

—Bulletin No. 24, from the Agricultural Experiment Station, Madison, Wis., is entitled "A New Method for the Estimation of Fat in Milk, Especially Adapted to Creameries and Cheese Factories." Dr. S. M. Babcock, chemist of the station, has devised a method for determining the amount of fat in milk, which appears to be simple, economical, and accurate. Briefly described the method is as follows. A carefully measured sample of milk is

placed in a test bottle having a long narrow neck. Next, an equal volume of sulphuric acid is added, and the bottle is placed in a wheel, which is revolved horizontally from six hundred to eight hundred times per minute, for about six minutes. At the end of this time the fat of the milk set free by the acid has risen to the top of the liquid. Hot water is then poured into the bottle, partly filling the neck. Upon again whirling for a couple of minutes the fat will rise through the water into the neck, in a long column, where it is easily read off by graduations on the neck. By this method the fat in skim milk, buttermilk, whey, cream, and even cheese can be determined.

—Messrs. Ginn & Co. have published "The Nine Worlds," by Mary E. Litchfield, being stories from the Norse mythology. The stories are based upon the Eddas, but the authoress has also relied much upon the best German and other authorities. Unfortunately, she has, as she admits in her preface, drawn largely upon her own imagination, the first story in the book having no foundation except a few lines of poetry, which really do not support it at all. Hence, though she tells us much about the mythology of the Norsemen, her book cannot be relied upon as an authority. The leading character in most of the myths is Loki, the spirit of evil, while Odin, Thor, and various other gods and giants, are brought prominently forward. The slaying of Baldur, who represents the summer sun, and the carrying off of Iduna, the goddess of spring, are among the most interesting myths. Miss Litchfield gives in an introduction an account of the Norse cosmology, and in an appendix a glossary of the names and attributes of the various gods and other personages. The book will interest those who like tales of the marvellous, and will impart some general information about the Norse mythology.

—The "Summary of the Seventh Annual Report of the Bureau of Statistics of Labor of the State of New York" contains matter of interest to economists. It is devoted to an account of the various strikes, lock-outs, and boycotts that have occurred in the State during the past five years, with statistical tables showing the

Publications received at Editor's Office,  
July 21-Aug. 9.

- AMERICAN Association for the Advancement of Science, Proceedings of Thirty-eighth Meeting, August, 1889. Salem, Permanent Secretary. 496 p. 8°.
- ANNUAL Report of the Chief Signal Officer of the Army to the Secretary of War, for the year 1889. Parts I and II. Washington, Government. 389 + 165 p. 8°.
- ANNUAL Report of the Department of Mines of New South Wales, 1889. Sydney, Government. 253 p. 8°.
- BUNYAN, John. Pilgrim's Progress. (Classics for Children.) Ed. by D. H. Montgomery. Boston, Ginn. 119 p. 12°. 35 cents.
- HARDY, A. S. Elements of the Differential and Integral Calculus. Boston, Ginn. 239 p. 8°. \$1.65.
- INTERNATIONAL Marine Conference, 1889, Proceedings of. Vols. I, II, and III. Washington, Government. 814 + 680 + 502 p. 8°.
- MIAMI Horticulturist. Vol. 1. No. 1. m. Bradford, Ohio, M. Cassel. 8 p. 4°. 25 cents per year.
- MONTGOMERY, D. H. Leading Facts of American History. Boston, Ginn. 412 p. 12°. \$1.10.
- MULLER, F. Max. Three Lectures on the Science of Language. Chicago, Open Court Publ. Co. 112 p. 8°. 75 cents.

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causes and results of the strikes and the costs to both parties. In giving the number of strikes, each establishment is reckoned separately, so that if a general strike occurred affecting a hundred establishments it counts in the report as a hundred strikes. On this basis it appears that during the five years from 1885 to 1889 the number of strikes in the State was 9,334, of which 5,866 were successful and 3,468 unsuccessful, while 50 were pending at the time of making up the report. The loss to the laborers is set down at over \$8,000,000, and the gain in wages for five years at upwards of \$18,000,000. Commissioner Peck thinks that there is no likelihood of a discontinuance of strikes, and believes that on

the whole they are beneficial to the laborers. He shows, however, that there is a strong disposition on the part of most labor organizations to exhaust all peaceful means of settling difficulties before striking, and quotes largely to this effect from their rules and regulations. The feeling of many employers about labor disputes is well expressed in a remark by one of their number which is quoted in the report: "When they have us down they give it to us; and when we have them down we give it to them" (p. 51). The commissioner believes, however, that "large-souled employers have no hard feelings against employees who protect themselves in an open and honorable manner."

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