

are not those which are recognized by modern science. Maury's 'Physical Geography of the Sea' is not in accordance with the views held nowadays; neither are primers on geography good authorities. It is meaningless to say that the valley of the Mississippi 'greets the south,' as its slope is southward. The author would have us believe that this southward exposure affects its climate, while practically it has no influence whatever. Passages like this are numerous in the book. On the whole, it may be considered a fair account of the subject, sufficient to meet the wants of the general reader, although the author's teleological views lead him to a considerable number of statements which will not be conceded by scientists.

NOTES AND NEWS.

PROF. ANTON DE BARY died at Strassburg on Jan. 19, aged fifty-seven years. He had been suffering for several months of carcinoma of the face, and had undergone an operation, but without recovering. He had held the chair of botany at the University of Strassburg since 1872, being called there from Halle. He had studied botany at Berlin under Alexander Brown, and was made professor of botany at Freiburg at an early age. His first publication, 'On the Fungi causing "Rusts" and "Smuts,"' in 1853, attracted much attention. While the anatomical methods of other authors had somewhat increased our knowledge of the *Thallophytes*, De Bary's method of tracing their life-history opened a new era in this study. For a few years he was engaged in studying certain algæ, but he soon returned to his favorite study, that of fungi. In 1864 he published the first number of the *Beiträge zur Morphologie und Physiologie der Pilze*, which was followed in 1865 by further studies on parasitic fungi. Here he traced the whole life-history of several parasitic fungi from their entrance into the host through all the various stages. He showed that the 'rust' of the wheat is identical with the *acidium* of the barberry, and thus was the first to prove the occurrence of heterocœcism. These observations and their startling results led to the extensive study of cultures which has been carried on so successfully since that time. In 1866 De Bary brought out the first edition of the 'Morphologie und Physiologie der Pilze, Flechten und Myxomyceten,' the second edition of which, thoroughly revised and brought up to date, was published in 1884 as 'Comparative Morphology and Biology of the Fungi, Mycetozoa, and Bacteria.' Both these editions were the standard books on the fungi, and gave for the first time a comprehensive review of the subject, much of their contents being the results of De Bary's own studies. The third number of his *Beiträge* appeared in 1870; but at the same time he published numerous memoirs, among which we mention that on the epidermis in the *Botanische Zeitung*, of which he had become editor after Von Mohl's death. Since 1866 he has been working on the 'Comparative Anatomy of the Ferns and Phanerogams,' but it was only in 1877 that the results of his researches were published,—a monument of De Bary's faculties of observation, his accuracy and extensive critical reading. The influence of this book in the botanical world has been enormous. In 1885 appeared his 'Lectures on Bacteria' in the form of a book. While the style of this book is attractive and clear, it abounds in new facts brought to light by De Bary's researches, among which the study of the development of the spores of *Bacillus Megaterium* takes a prominent place, and gives a comprehensive and critical review of the whole literature of the subject. As a teacher he was eminently successful, and the influence of the Strassburg school upon the development of botany and biology has been very great. Although he was not a brilliant lecturer, he knew how to excite the enthusiasm of students who worked in his laboratory; and all who worked under his direction were so impressed with the truthfulness of his nature, his justice, modesty, and kindness, that so long as his pupils live he will not be forgotten.

—In his bulletin for December, 1887, Mr. J. R. Dodge, statistician of the Department of Agriculture, has an interesting note on the British wheat-supply for the last fifteen years. Great Britain absorbs a large portion of the wheat-supply of the world, and, if it is determined where its supply comes from, we ascertain thereby

where a surplus of wheat is grown. Since 1874 the largest national product has been that of the United States. France comes second, although she imports more than she exports, and India third. Russia occupies the fourth position. By analyzing the official statistics of Great Britain, we find where the needed wheat has been obtained, and in what proportion each source of supply has contributed. From 1872 to 1886 inclusive, the United States has furnished in grain and flour 51.1 per cent, and for eleven months of 1887 the proportion has increased to 64 per cent. Russia in fifteen years averaged 13.6 per cent of the whole, and for 1887 only 5.4 per cent. India contributed an average of 7.9 per cent, and for 1887 11.3 per cent, which is the smallest percentage in the last five years, and a marked decline in absolute quantity from the previous year. Australasia fluctuates greatly in its contribution, averaging 3.9 per cent for fifteen years, and less than 2 per cent for the sixteenth. These three competitors of the United States have together furnished only 25.4 per cent,—less than half as much as this country during fifteen years, and a much smaller proportion in 1887.

—Mr. William Ellis, president of the Royal Meteorological Society, reviewed, in his recent annual address, the work and object of the society, which, although unable to carry out expensive original or experimental work, has a considerable influence upon the development of the science of meteorology. Mr. Ellis remarked that the society has succeeded in inciting volunteer workers throughout the country to united action, of which one recent example was the ready response to the request of the society for photographs of lightning, an excellent collection of which had been obtained, and which would shortly be exhibited; in addition to which, arrangements were being made for the more systematic observation of thunder-storms. Referring to the question of sympathetic relation between sun-spots and magnetism and meteorology, he thought that any complete treatment of the question in its meteorological aspect seemed to require that it should be dealt with in a much more comprehensive manner than before, for which purpose observations more completely covering the surface of the globe might be necessary, if indeed not necessary also for the solution of many other meteorological questions, the present meteorological stations being distributed over the earth in such isolated clusters. The attention given to synoptic charts was most important, but the general meteorological characteristics of places should also still continue to be studied. After remarking upon other matters, he laid before the meeting tables showing the monthly means of amount of cloud from observations made in three different series at the Royal Observatory, Greenwich, extending in all from 1818 to the present time. In concluding, Mr. Ellis said that at one time the science of meteorology seemed likely to form an exception to the general rule of advance, for, more than any other, it has required the united action of many workers; but the field of inquiry of late years opened out allows us already to talk of the new or modern meteorology,—phrases typical of the advance achieved, although the knowledge gained seems only to remind us of how much has yet to be done. The Royal Meteorological Society has at present five hundred and twenty-two members. Dr. William Marcet was elected president for the ensuing year.

—A firm in Yokohama, Japan, is now manufacturing the excellent Auzoux models of human anatomy at low prices, as a correspondent learns by private letter.

—In *Science* of Feb. 3, p. 57, 1st column, 21st line from bottom, 'thallophytes' should read 'protophytes.'

—In *Science* of Feb. 10, p. 67, 1st column, 35th line, 'Herndon' should read 'Heudon,' as also throughout the paragraph.

—In *Science* for Feb. 10, p. 69, 2d column, 27th line from bottom, '\$2' should read '\$1.'

—Leaflets Nos. 7 and 8 in the series issued by the Industrial Education Association (9 University Place, New York City) have reached us. No. 7 is an able and concise paper on the scientific treatment of education, and No. 8 gives an account of progress in the New York City schools in 1887. This series is having a large circulation, and doing great good; for the phenomenally low price

— one cent each, or two cents postpaid — at which these leaflets are issued put them within the reach of all who care to keep posted as to educational progress in any part of the world.

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.

Twenty copies of the number containing his communication will be furnished free to any correspondent on request.

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

The Scientific Swindler Again.

A YOUNG man of gentlemanly bearing, who calls himself Dr. S. M. Gutmann, and claims membership in the American Chemical Society, has been lately imposing on various members of the scientific fraternity in New York and vicinity. He claims to be a pupil and son-in-law of Professor Hofmann of Berlin, and shows letters purporting to come from some well-known persons, who recommend him as an expert in the manufacture and analysis of coal-gas. He is familiar with the names of chemists and physicists in this country, and uses them with freedom by way of introduction to strangers. He represents himself to be in pecuniary straits, as the result of long and fruitless efforts to obtain employment since his arrival in this country.

Since there are many readers of *Science* whom he will attempt to victimize, it may be well to warn them against this plausible and mendacious vagabond.

W. LeCONTE STEVENS.

Brooklyn, Feb. 10.

Psychics, or the 'New Psychology.'

THE 'new psychology' is a term I have noticed cropping up of late, used as the expression, the 'new chemistry,' or any similar phrase, might be to indicate a late and advanced state of a science, such as may properly bear out the word 'new' in comparison with an old or former less-advanced stage of evolution of a given subject. Referring to several dictionaries at my elbow, I find the word 'psychics' defined as 'the same as psychology,' and marked '[Rare.]' in one of them.

In this connection, I beg leave to quote a sentence from a little treatise on psychics entitled 'Can Matter Think?' published in 1886, where I say (p. 29), "I have said what I think the excellent word 'physiology' should really mean. But I wish that the sadly abused term 'psychology' could be rooted out of the dictionary, or consigned to the same limbo where 'theology' has already been put by sound science and wise philosophy. 'Psychology' means any thing, from the vagaries of superstitious spiritualism to a system of mental philosophy or a code of metaphysics. As we have the good word 'physics' for all the physical or rupo sciences, I should like to see 'psychics' replace psychology, with the distinct understanding," etc.

What I mean by this word is precisely what seems to be implied by the expression 'the new psychology;' and many may be inclined to agree with me, that 'psychics' is a short, handy name which commends itself, or, so to speak, carries its own credentials.

A propos of words, did not *Science* (or was it *Literary World* of Boston?) discuss lately the propriety of the adjective 'sciential' as a desirable new coinage to characterize any thing pertaining to science? If so, it may not be generally known that 'sciential' is Miltonian, as in the lines, —

"But first, low reverence done, as to the power
That dwelt within, whose presence had infused
Into the plant *sciential* sap."

Paradise Lost, ix. 837.

— where the meaning is 'science-making' or 'productive of knowledge,' — exactly what 'scientific' literally means, though such literal sense is not implied in the ordinary usage of the word, which 'sciential' was proposed to replace.

ELLIOTT COUES.

Washington, D.C., Feb. 13.

The Expansion of Pine Wood through Absorption of Water.

DURING the summer of 1886, while seeking for a method for securing a measure of the soil moisture, I conducted an experiment to discover the amount and rate of the expansion in a section of white pine wood in passing from a state of complete saturation to one of complete dryness. While looking over my notes, I find the data, and, as the experiment was carefully performed, have thought that possibly the results may be worth putting on record. The results secured were as follows:—

Date. (1886.)	Weight of Section. (Grams.)	Per Cent of Water, calculated on Dry Weight.	Length. (Inches.)	Per Cent of Expansion, calculated on Dry Length.
Aug. 22	505.0	22.76	11.12	5.30
" 23	475.4	17.91	11.12	5.30
" 24	54.4	12.70	11.10	5.11
" 25	440.5	9.25	11.08	4.92
" 26	428.5	6.27	11.02	4.37
" 27	423.7	5.08	11.02	4.37
" 28	412.7	2.35	10.84	2.46
" 29	407.9	1.16	10.68	1.14
" 30	407.9	1.16	10.68	1.14
Sept. 1	403.2	—	10.56	—
" 2	403.2	—	10.56	—

A section two inches in length was sawed off from the end of a sound, unchecked, white pine board, one and one-eighth inches thick, and of such a width that the section when completely dry was 10.56 inches long. The section was then immersed for thirteen days in a tank containing spring water, of which the temperature was about 60° F., to secure saturation. It was then exposed to the air of a dry room, and its weight and length noted daily until it ceased to lose weight, after which it was placed in a drying-oven and completely dried.

E. S. GOFF.

N. Y. Agric. Exper. Station, Geneva, Feb. 9.

Queries.

28. FLOATING DROPS VERSUS FLOATING NEEDLES. — In order that drops of water may float on the general surface, there must be entire absence of any thing which might diminish surface-tension. But the text-books, even the last edition of Ganot's 'Traité de Physique,' direct us to slightly grease needles before dropping them upon the water. Stanley, on p. 49 of his book on fluids, asserts that a polished steel wire one inch long and five-hundredths of an inch in diameter just floats if thoroughly cleaned with caustic potash and wiped dry to prevent oxidation. He says, "If there was the smallest particle of grease upon the wire, a much less diameter only would be supported." And in the same book are experiments to prove that a wire should be wetted in order to float. It may be that slightly greasing a needle does more good by smoothing over an imperfectly polished surface, than harm by diminishing surface-tension; but the phenomenon of floating drops appears to me to confirm the statement in quotation-marks above. Will some one kindly inform me where I can find a discussion of the statements of Stanley on this subject?

F. C. VAN DYCK.

New Brunswick, N.J., Feb. 11.

Answers.

20. STAR OF BETHLEHEM. — Three distinct objects have been confounded in the public mind; viz., the planet Venus, Tycho's new star of 1572, and the apparition called the Star of Bethlehem. The brilliant object visible in daylight was Venus. Tycho's star was visible in the north in the constellation of Cassiopeia in 1572, and has been thought by some, on the slenderest evidence, to be a variable of long period, which might re-appear about this time. A good account of it is found in Humboldt's 'Cosmos,' Vol. III. Chapter IV. For an account of the theories about the Star of Bethlehem, consult the unabridged edition of Smith's Bible Dictionary, Vol. III., under the heading, 'Star of the Wise Men.'

H. A. HOWE.

University of Denver, Feb. 4.