Wilder has nothing to do with zoological nomenclature.

G. BAUR.

THE SOURCE OF METENCEPHALON AND OTHER LATIN NAMES FOR THE SEGMENTS OF THE BRAIN.

TO THE EDITOR OF SCIENCE: In my paper, 'The definitive encephalic segments and their designations,' read before the Association of American Anatomists last May, were offered objections to the action of the Anatomische Gesellschaft* in designating the region between the cerebellum and the myel (spinal cord), not by *metencephalon*, as in the last three editions of Quain's 'Anatomy,' but by *myelencephalon*. This last was proposed by Owen for the entire neuron (central nervous system) in 1866 or earlier, and, so far as I know, its application to a single segment was made by Huxley in 1871. Before printing the paper above named, I desire to ascertain when and by whom that region of the brain was first called metencephalon; incidentally, also, the source and date of the other words, *prosencephalon*, *diencephalon*, *thalamencephalon*, *mesencephalon* and *epencephalon*, that have been offered as equivalents for von Baer's names, *Vorderhirn*, *Zwischenhirn*, *Mittelhirn*, *Hinterhirn* and *Nachhirn*. Information through your columns or directly will be very welcome.

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ANDRÉE'S NORTH POLE BALLOON VOYAGE.

IN SCIENCE for August 20th, p. 291, occurs a copy of a telegram purporting to come from Dr. Nils Ekholm regarding the Andrée balloon which is attracting so much attention. One serious error in the transcription should be corrected. It is stated that the balloon at the start rose to a height of 15,000 to 25,000 ft. The original may have been 150 to 250 metres (490 to 820 ft.), but could not possibly have been as given. To ascend 25,000 ft., over 3 tons of ballast would have to be thrown out, and this, of course, is not thinkable. At 25,000 ft. two-thirds of the gas would have been lost and the voyagers would have been in great danger of freezing to death.

It is a little difficult to understand Dr. Ekholm's figures. Admitting that 1,800 cubic feet of gas leaked out each 24 hours, entailing a loss in buoyancy of 123 pounds, as he gives it, there should still be enough gas for over 70 days, instead of 22 to 24 days, as given. A leakage of 1,800 cubic feet would be about 1%, which is not excessive, though about 2 times as much as was expected. There are very few balloons built that have a leakage less than 3%. The very best 'cæcum' balloons ever made have a leakage of ½% in 24 hours. The total buoyancy of the gas was 12,000 pounds. The 3 men would weigh 500 and the balloon probably not over 1,700 pounds. Very tight balloons have been made in this country that would weigh for the same size about 900 pounds. This would give 80 days' flotation. It is probable that the computation calls for even a heavier balloon and also for carrying the car all the way. It is customary, however, to prepare the car so that it can be used as ballast and at the last use the ring of the balloon.

It is a great pity that more experience was not gained in a long voyage before attempting the extremely hazardous voyage to the Pole. The fact that the balloon was beyond control at the very start is very significant. It is doubtful if any aëronant living can release safely a balloon of 170,000 cubic feet capacity in a twenty-five-mile wind. Those who were present at St. Louis on June 16, 1887, will remember the extreme difficulty experienced in sending off the World balloon 160,000 cubic feet in a twenty-mile wind.

If plans had been made to keep the balloon at 6,000 feet or so the success of the voyage would have been better assured. By using a small pilot balloon it would have been easy to send the overflow into the smaller balloon and, after the larger had leaked out enough, the gas in the smaller balloon could have been sent into the larger and the smaller used as ballast. At 6,000 feet the danger of rain and sleet freezing on the balloon would have been avoided and the currents which are far steadier and more rapid would have reduced the voyage by

*His. W. Die Anatomische Nomenclatur. *Archiv. für Anat. u. Physiol.*, Anat. Abt., Supplement-Band, 1895, p. 156.

one-half or even one-third. It is not generally known that this country holds the record for a long-distance voyage.

On July 1, 1859, La Mountain and three others sailed from St. Louis, Mo., to Henderson, N. Y., 870 miles in nineteen hours. Such constancy and velocity of air currents is seldom thought of and could have been found only, as in this case, at a height of 6,000 to 8,000 feet.

The balloon route would seem the ideal method of reaching the Pole and the French are already planning for such a voyage in 1898. Let them first bring their balloon to this country and make the Atlantic voyage in the track of steamers where the least untoward event will not be absolutely fatal. Also, by all means, let the balloon be placed at a height of at least 6,000 feet. It is just as easy to keep a balloon there as close to the earth. At Mt. Washington (6,300 feet) there have been frequent cases of west winds of 100 miles and over per hour for 36 hours, and this would mean less than 40 hours for the trip.

Of course, the great question is as to the occurrence of storm and high-area conditions at the Pole similar to those in more southerly latitudes, and the evidence from weather maps made near the Pole seems to show a great similarity. If so, any steady wind near the Pole would give a straight course to the Pole and the same wind would give a straight course back to civilization. It is a pity that with so much interest centered in this enterprise there should be so many fakes of carrier pigeons, etc., started. It is very rare, indeed, that a carrier has been known to fly 1,000 miles and then only after being taken over some part of the course half a dozen times. For a carrier to go 1,500 or 2,000 miles is an unheard-of feat.

H. A. Hazen.

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SCIENTIFIC LITERATURE.

Agriculture in Some of its Relations with Chemistry. By F. H. Storer. New York, Charles Scribner's Sons. 1897. Pp. 1901. $5.00.

The new edition of Storer's 'Agriculture' is in three volumes; it is accompanied by a very full and well-arranged index, which adds to its value as a reference work. The author is modest in his title, for not only is agriculture dealt with in its relations to chemistry, but very largely in its relations to the allied sciences, physics, physiology, botany and zoology.

For example, the contents of Volume I. include thirteen chapters, and in the first six the relations of physics and plant physiology to agriculture are discussed quite as fully as are the relations of chemistry in the remaining chapters. In Chapter III. 'Relations of Water to the Soil' is discussed, and in Chapter IV., 'Movement of Water in the Soil;" Chapter V. is devoted to a study of the principles of 'Tillage,' and Chapter VI., 'Implements and Operations of Tillage.' In these branches chemistry is not the primary science involved. In Chapter I. 'The General Influence of Soil and Air to the Plant' is treated, and in Chapter II., 'The Atmosphere as a Source of Plant Food.' In the discussion of these subjects the importance of the relations of plant physiology are fully recognized.

I note the above in order to show the general scope of the work; it is not limited to a setting forth of the relations of chemistry, as it could not well be and give a broad view of scientific agriculture.

That the author regards the question of manure to be of very great importance is shown by the elaboration of the various topics entered into, especially concerning the sources of supply, the modes of action and methods of using the various products. Seventeen chapters, seven in Volume I. and ten in Volume II., aggregating over 750 pages, are devoted to this one branch of scientific agriculture, and in which chemistry *is* the primary science involved.

His method of treating of the artificial fertilizers is worthy of particular mention. Not only is the theoretical consideration concerning the composition and character of the various fertilizing materials and their modes of action given, but numerous experiments from leading authorities are cited, thus putting before the student the original source of the information; a point often greatly desired by those who have not had a broad training in these lines, and