year 279, in the second year 158 and in the third year 147. There will be no regular class graduated this year, it being the first in which the four years course has taken effect. The temporary decrease due to the lengthening of the course has this year been made up, and next year with the four classes the attendence will be very large.

THE Cornell University Register for 1896–7 has already been issued; it shows a registration of 1763 compared with 1684 at the same time last year, this being the largest registration hitherto recorded. The faculty also shows an increase, the total number of instructors now being 175. The Library records a gain of 12,890 books and 1200 pamphlets since last year.

AT Cambridge University Dr. L. E. Shore, of St John's College, has been appointed a university lecturer, and Mr. Eichholz, of Emmanuel College, an additional demonstrator in physiology.

MISS KNIGHT, M. B. Lond., has been appointed professor of anatomy and pathology to the Lhudiana Medical School, North West Provinces, India.

THE eighth University Extension Summer Meeting will be held at Oxford, July 31–August 25, 1897.

DISCUSSION AND CORRESPONDENCE.

THE JURA IN THE UNITED STATES.

'THE Jurassic formation on the Atlantic Coast' (SCIENCE, Dec. 1, pp. 805–816) is the most important paper on practical geology and classification published yet by Prof. O. C. Marsh. The conclusions arrived at are excellent, and the proofs given, although necessarily summary, are sufficient to warrant the exactness of the classification of the Potomac formation as belonging to the Upper Jura.

A few remarks on the history as well as on the geologic chronology may be acceptable, for, without detracting anything from the merit and great value of the memoir of Prof. Marsh, some points can be rendered more clear and easily understood, at the same time more exact.

We read: "Until a comparatively modern date, this supposed absence of Jurassic deposits was thought to be true, also, for the rest of this country. I well remember the parting advice given me by an eminent professor of geology, with whom I studied in Germany (Ferdinand Romer), 'The first thing you should do on your return to America is: look for the Jurassic formation. I am sure it is there; full of fossils.'" (SCIENCE, p. 805.) The choice of Ferdinand Romer as an adviser on the Jurassic formation in America is unfortunate, for Prof. F. Romer, during his stay in Texas, remained several months at Fredericburg, which lay on the Jurassic formation; besides he explored, in some detail, the valley of the Trinity River, where the Jura exists also, and not only did he not recognize the Jurassic formation in Texas, but by a wrong determination of a *Gryphoa*, which he identified with the *Gryphea Pitcheri*, he helped greatly the confusion created a few years later by a paleontologist who denied the existence of the Jurassic deposits of New Mexico, near the Texas line, made in 1853, by the geologist of the Pacific Railroad exploration by the thirty-fifth parallel of latitude, commanded by Lieutenant A. W. Whipple. As Prof. Marsh says, "Ferdinand Romer added much to our knowledge of the geology and paleontology of this country," for he published the first essay of a geological map of Texas in 1849, and three volumes of paleontology on Texas and Tennessee in 1852, 1860 and 1889; but at the same time it is important to notice that he did not recognize in Texas the Permian, the Trias nor the Jura; and as to the Cretaceous he failed to recognize the Lower Cretaceous, or Neocomian, going so far in his erroneous determination of age of strata as to place the Lower Cretaceous above the Upper Cretaceous, or Chalk. It is impossible to say that Romer was a good practical geologist when in the field in an unexplored country; but as a paleontologist he was more successful, although he made conspicuous errors, and displayed a want of knowledge in ignoring the Primordial fauna of Texas, which he referred to the second fauna.

The figure 1—'Geological Horizons of Vertebrate Fossils' (SCIENCE, p. 806), is rather incomplete in some important points; for instance, the Cretaceous beginning with the 'Dakota group,' which truly is only the lower division of the Upper Cretaceous, or true Chalk,

and the Lower Cretaceous, or Neocomian, so well developed in Texas (Comet Creek, Fort Washita, Comanche, etc.), is completely ignored. By *contra*, Prof. Marsh places the Laramie series in the Cretaceous. As he says, "that vertebrates afford the most reliable evidence of climate and other geological changes," it is somewhat surprising to see him put aside the beautiful discovery of an important and rather rich vertebrate fauna near Reims, in France, by M. le Docteur V. Lemoine, at Cernay and Aï, or Ay, in Champagne, absolutely identical as regards the forms and genera with what Prof. Marsh has imprudently called 'a Cretaceous Mammalian fauna' in the Laramie formation, showing 'how difficult it is to lay aside preconceived opinions,' according to his own phraseology. The Cernayrian fauna, as it is called by Dr. Lemoine and Prof. Gaudry, is Tertiary * and not Cretaceous.

The stratigraphic position of the first mammal *Dromatherium* in the Trias, according to Fig. 1 of Prof. Marsh's paper, is contrary to the opinion of the discoverer, Dr. E. Emmons, who has always referred it to the Permian, for he finds it far below the true Trias of North Carolina and Virginia.

Prof. Marsh insists on the variety of colors in the plastic clays of the Jura at Gay Head, in the Maryland, Wyoming and Colorado, saying: "Brilliant red, green and yellow tints are especially prominent, yet the white and black shades are equally noticeable" (SCIENCE, p. 812). This is very true and I saw the same striking colors in New Mexico, calling attention, as far back as 1853, to the colors of the sandstone with a remarkable yellow-citron tint and the brilliant white of other beds of sandstone at Tucumcari, Cañon Blanco and Laguna Colorado, and the blue of the *Gryphea Tucumcarii* marls at Pyramid Mount.

* SCIENCE, p. 835, in 'Scientific Notes and News,' we read that Dr. Lemoine has exhibited photographs obtained by Röntgen's rays, of fossils embedded in the *chalk* strata of Reims. The error of calling the strata near Reims, at Cernay and Aï in which Dr. Lemoine has collected fossil bones of mammals, birds and reptiles is difficult to understand, for he called them, not *chalk*, but *Tertiary* or *Lower Eocene* (*Bull. Soc. Géol. France*, 1 Nov., 1896, pp. cxciii–cxcv).

In regard to early investigations, Prof. Marsh has the kindness to recall my contribution of 1853 in the Rocky Mountain region, when I found the Jura at the Tucumcari Mounts, Cañon Blanco, Laguna Colorado, and in the vicinity of Zuni (New Mexico and Arizona), in 1853, the Jurassic formation had not been truly recognized yet in North America, for the only indication of Prof. W. B. Rogers of the Oolitic age for the coal of the vicinity of Richmond, Virginia, was proved as early as 1849, as belonging truly to the Trias and not to the Jura.

Prof. Phillip T. Tyson, of Baltimore, after referring the red plastic clay of Maryland first to the Cretaceous in 1860, changed his view in finding specimens of *Cycadea*, and in 1862 called it Jurassic. In 1863 I saw the same formation in the vicinity of Washington and did not hesitate to call it Jurassic; but I published nothing about it, until 1888, in my paper 'American classification and nomenclature,' pp. 36–37, Cambridge, saying: "During the Civil War (November, 1863), when visiting some friends in camp around Washington, I was shown a fossil 'pineapple' found on the farm of Dr. Jenkins, one mile south of the Baltimore and Washington railroad, sixteen miles from Washington, Prince George County, Maryland. I recognized at once a well preserved Purbeck's *Cycadea* and referred the red and gray mark, in which it was found in company with pieces of petrified wood and broken pieces of indeterminable bones, to the Purbeck formation of England. The little of what I saw there reminds me of the Purbeck group, as I saw it at Portland Island and Durlstone Bay, near Weymouth, England, where so many specimens of mammalia (marsupial), reptiles, birds, turtles, fishes and *Cycadea* have been found in its celebrated 'dirt bed.'

"Lately the United States Geological Survey have called those white, red and bluish gray clays and sands *Potomac formation*. It is a fresh water deposit contemporaneous with the Purbeck strata of Swanage and vicinity, Dorsetshire, England, which represent in North America that most important upper part of the Jurassic system called now on the continent of Europe the *Purbeckian*." So the Potomac for-

mation as defined by the United States Geological Survey was referred as far back as 1888, as Jurassic formation.

JULES MARCOU.

CAMBRIDGE, MASS., December, 1896.

SOME NEURAL AND DESCRIPTIVE TERMS.

TO THE EDITOR OF SCENCE: In a recent circular asking the opinions of experts as to the prevailing and preferred usage of anatomic and neurologic terms in behalf of the projected Dictionary of Philosophy and Psychology, Dr. C. L. Herrick mentions certain terms and principles which have been either proposed or adopted by me.

But for the request to 'respond as early as possible,' I should suggest that replies be either delayed or regarded as provisional until after the appearance of my paper, 'Neural Terms, International and National,' *Journal of Comparative Neurology*, VI., pp. 216–340, December, 1896), wherein the general subject is discussed at length, and in parallel columns are given the neuronyms adopted by the Anatomische Gesellschaft in 1895 and those now preferred by me. But for the remoteness of Dr. Herrick's present address the following comments would be submitted to him first.

3 (b). For the part now called by the Gesellschaft 'Subtantia perforata lateralis' I formerly proposed *præperforata*, but since 1889 have employed *præcribrum*.

4 (e). *Metencephalon*, as employed in the last three editions of 'Quain' and adopted by me in 1881, designates the last definitive encephalic segment, *i. e.*, between the cerebellar segment (our epencephalon) and the myelon or spinal cord. As given in the circular it has two other usages, viz., either for the cerebellar segment alone (His) or for both regions (some authors). The encephalic segments will form the subject of a paper at the coming meeting of the Association of American Anatomists.

(g). *Metencoele* is doubtless a misprint for *metacoele*. The Latin (international) forms are *metacoelia* and *mesocoelia*; the national English forms *metacele* and *mesocele*.

(j). As to *Neuron* (proposed by me in 1884 as a mononym for *axis cerebro-spinalis*) see 'Reference Handbook, IX., 100, and *Proceedings Assoc. Amer. Anat.*, 1895, 44–45. Indirect endorsement of it is contained in such compounds as *neuromere*, *neurenteric*, etc. It like manner *myelencephalon* (for either the entire cerebrospinal axis or for the last encephalic segment) embodies indirect endorsement of *myelon* for *medulla spinalis*.

As to *cephalic* and *caudal*, *cephalad* and *caudad*, during an experience of sixteen years no actual instance of misapprehension has been observed. But since they evidently are not acceptable to some, might not the increasing employment of *præ* and *post* in composition with the force of adjectives, justify taking these prepositions as the bases of adjectives, viz. *præalis*, *postalis*, England, *præal* and *postal*; adverbs, *præad* and *postad*. As mere vocables the last two are no more objectionable than *quoad*. Classic precedents for the derivation of adjectives from prepositions or adverbs are *contrarius*, *extraneus*, *proprius*, *crastinus*, *pristinus*, *interior*, *supernus*, and *ἀηδτερος*. BURT G. WILDER.

ITHACA, N. Y., December 19, 1896.

SCIENTIFIC LITERATURE.

CARL VOGT.

La Vie d'un Homme, Carl Vogt. Par William Vogt. Avec deux portraits par Otto Vautier. Paris, Libraire C. Reinwald; Stuttgart, E. Nägele. 1896. 4°. Pp. 265.

The life of this well-known naturalist was stormy and eventful, in a degree momentous to science, and also to the political and philosophical history of his time. His son has given us a vivid portrait of an interesting character—a very positive one—who, besides leaving his imprint on the science of his day, was in some respects a many-sided man, not only being an eminent investigator, a teacher, a founder of scientific societies, a popular lecturer, a brilliant caustic writer and controversialist, but also a man of great public spirit, an active republican, almost a revolutionist, protesting and fighting during the middle of this century for right and justice against the ultra-conservative, reactionary forces in State and Church.

Carl Vogt was born in 1817 at Giessen. He was by extraction a Celt, rather than a German, and this may account for his turbulent, combative, revolutionary nature, while his pro-