

be also pessimistic regarding those whom it calls 'natural scientists,' for the editorial quoted above says: "Devotees of natural science are, as a rule, the most intolerant of all university teachers, especially toward differences of opinion within their own sphere." We have published a number of articles on scientific education, but none of these have betrayed a prejudice against the classics equal to that against modern scientific education shown recently by Professor Wilson, of Princeton; Professor Peck, of Columbia, and President Stryker, of Hamilton, nor equal to that against the classics in the recent program of President Andrews, himself formerly a teacher of classics.

WHILE engaged in promulgation we may remark that President Stryker, who had much to say last winter in regard to 'debasing' the A. B. degree by granting it for scientific studies, has allowed Hamilton College to give the degree of Ph. D. *causa honoris*. This, we believe, is illegal in the State of New York.

THE will of Charles T. Wilder, of Wellesley, Mass., gives more than \$100,000 to charitable and educational institutions, including \$10,000 each to Robert College at Constantinople, the Armenian School for Girls at Constantinople, the Colorado College at Colorado Springs, Whitman College at Walla Walla, Wash., and Charleston College, Northfield, Mass. In a codicil dated July 27, 1897, Mr. Wilder bequeathed \$15,000 to the trustees of Amherst College for the purchase of land for an observatory. The residue of the estate, both real and personal, is left to the executors in trust to be distributed among charitable, educational and religious institutions.

THERE is offered this year at Amherst College a prize of \$500 for the best prepared freshman in the classical division and a similar prize of \$300 in the scientific division.

THREE new associate professors have been appointed at Oberlin College, Charles Edward St. John, Ph.D. (Harvard), in physics and mathematics; Herbert Lyon Jones, M.S. (Denison), A.M. (Harvard), in Botany, and S. F. McLennan, A.B. (Toronto), and Ph.D. (Chicago), in psychology and pedagogy.

At Williams College, Mr. Edward V. Hunt-

ingdon (Harvard) has been appointed instructor in mathematics and Mr. Frank H. Williams, assistant in chemistry.

#### DISCUSSION AND CORRESPONDENCE.

##### AMPHIBIA OR BATRACHIA.

As Professor Wilder\* has expressed the hope that the discussion on the proper name of the class variously known as Amphibia or Batrachia 'may continue until all doubts are removed,' I venture to add my contribution. Dr. Baur† has treated the history of the nomenclature in his usual thorough manner, but perhaps has not laid sufficient emphasis on one point (although fully recognizing it himself), which has influenced me more than any others and probably will appeal to Professor Wilder more than the others.

The principle of priority of nomenclature should guide us in the selection of names of large groups as well as those of genera and species, provided there is no counteracting element or objection. It is especially important to retain the names of Linnæus as much as possible.

Linnæus introduced into the system six classes—Mammalia, Aves, Amphibia, Pisces, Insecta and Vermes. These have all been generally retained by succeeding naturalists except Amphibia. While many have adopted Amphibia, however, still more, perhaps, have employed Batrachia. But there appears to be no good reason for this use of Batrachia at the expense of Amphibia.

Amphibia should be retained as a *class* name, as it was at first given *as such*, and the fact that the class as originally constituted contained diverse elements should weigh no more against the adoption than the analogous extensions in the case of *Insecta* and *Vermes* or innumerable genera. The name should be restricted to the typical subdivision of the primitive Amphibia.

The name Amphibia, doubtless, expresses the concept of Linnæus derived from his own observations of living animals, and he must have been most impressed with the metamorphosis of some which he mentions first among

\* SCIENCE, August 20, 1897, p. 295.

† SCIENCE, July 30, 1897, pp. 170-174.

biological attributes of the class ('*aliis metamorphosin subire*'). But however this may be, the name was first limited to the forms undergoing metamorphosis by De Blainville, and there is no reason why that restriction should not be respected.

The name *Batraciens*, or *Batrachia*, was given as an *ordinal* name. It was not used as a class name till long after *Amphibia* had been duly restricted to the class still so called.

If the name *Batrachia* were usable at all it should only be as an ordinal designation, as Huxley has done. But it cannot be legitimately used as such, because many years before the name *Salientia* had been introduced by Laurenti for the same order, and most of the best herpetologists of the present time (Cope, Boulenger, et al.), have revived or accept the name for the order so designated.

The name *Amphibia* was first used as a class name by Linnæus for a group which was certainly very heterogeneous, inasmuch as it included not only the typical Amphibians and reptiles, but also the Marsipobranchs and Sclachians, as well as certain true fishes (*Lophius*, *Acipenser*, etc.). The class was divested of the fish-like forms by the editor of the *Systema Naturæ* (Gmelin, 1788), and with these limits it was long retained.

The essential point in the case under consideration is that Linnæus first recognized a *class* intermediate between fishes and birds, whose *typical* representatives pass part of their life in water and part on land, and the apt name *Amphibia* was given to that class. (The name is eminently suggestive and expressive for the class as now limited.) *Batrachia* was given long afterwards both as an ordinal and class designation. (The name is quite inapt for many of the species.)

THEO. GILL.

#### SURVIVAL OF THE ART OF ILLUMINATING MANUSCRIPTS AMONG THE GERMANS IN EASTERN PENNSYLVANIA.

AMONG the interesting objects included in the collection of tools, utensils and paraphernalia, representing the life of the American pioneer, recently made for the Historical Society of Bucks County, Pennsylvania, two curious

paint boxes, for a time defying explanation, have at last led to an interesting observation. By degrees, after a series of investigations, beginning on August 20th, I learned that these boxes had contained, in their wooden compartments, the paints and colored inks by which the masters of the German schools in upper Bucks County (discontinued about 1850), taught the art of *Fraktur*, or illuminative handwriting done in colors for permanent preservation. The liquid colors mixed in whiskey were contained in the little glass bottles still occupying their pigeon holes in one of the boxes. Other bottles contained inks, and one the varnish, consisting of the gum of the cherry tree diluted in water. A long compartment held the brushes and quill pens.

With these implements the masters of *Fraktur*, generally Mennonites (who sometimes instructed pupils in the art as an addition to the ordinary tuition of a schoolmaster), illuminated the title pages of numerous Mennonite manuscript song books still extant in the county, produced elaborate title pages for Bibles, name cards, marriage and death registers, and Scriptural texts. A striking example in the possession of Henry K. Gross, of Doylestown, is a transcription of the 18th verse of the 19th chapter of John with decorated letters and floriated capitals in red, green, brown, blue and black, set above a bar of music, and twelve lines of cursive manuscript, upon which are placed two birds in red, green and black. A pious admonition in red and black text edges transversely the left end, while the lower margin is filled with an alphabet in various text. The borders are floriated and plain red or blue.

Further examples are: A, Title page to Church song book (*Lieder Buch*, printed in Germantown, by Michael Villmeyer, in 1811), name Susanna Fretz upon heart, from which springs a tree with conventional tulips; deep beaded borderings, 1814, colors red, brown, yellow and black, red predominant. B, Title page to manuscript song book, name Susanna Fretz (spelled Fretzin for feminine) in red circle with date 1810; stalks with black leaves and conventional tulips to right and left; foliated border with red leaves on black and yellow ground. C, Title page to manuscript hymnbook; name,