

and was buried in the pauper lot of Ronaldson Cemetery. Only the intervention of two or three students saved him from the medical college. In 1919 a stone was placed over his grave by Mr. Henry C. Mercer, of Doylestown. This reads:

CONSTANTINE S. RAFINESQUE

Naturalist and Philosopher

Born, Constantinople, 1785

Died, Philadelphia, Sept. 18, 1840

To do good to mankind has ever been an ungrateful task.  
The work of God to study and explain  
Is happy toil and not to live in vain.

Other epitaphs suggested by Rafinesque himself were these:

Un voyageur dès le berceau  
Je le serai jusqu'au tombeau.

Linné, grand génie, il a choisi pour guide.

Quite recently Transylvania has interested itself afresh in the most famous of its line of professors. Mrs. Charles F. Norton, librarian, sent to Philadelphia for a photograph of the headstone, intending this as a gift to the Rafinesque Botanical Club of the university. It was found that the cemetery was to be turned into a public park. On learning this, Mr. James A. Spencer, a brother of Mrs. Norton, "expressed a wish that Transylvania, which had loved and honored Rafinesque, might have his body, which was buried in a neglected grave."

This plan was duly carried out in March, 1924, as I learn from Mrs. Norton, and the bones of the restless explorer now lie in the campus of Transylvania.

It is no longer true, as the present writer said forty years ago, in a biographical sketch of "A neglected naturalist," that "we know not even the place where he rests after his long journey."

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### NAMING AND EXACT NAMING

IN SCIENCE, vol. 45, page 190, 1917, I called the attention of my colleagues to the need for more complete titles, suggesting that in biological papers the name of the animal studied be given. This is now more often done, but owing to the still frequent omission of this datum, the difficulty thus introduced in collecting the literature on a given animal is painfully evident to any one who has made the attempt.

I beg now to present a further request touching the name of the rat, an animal so largely used for a variety of biological investigations.

The term "white rat" has appeared not infrequently in recent titles, but this says nothing concerning the color of the eyes. If, for this, the term "albino rat" were employed, there could be no question as to the variety used, and some day this may prove to be important.

Further, several active laboratories now use the pied rat, not the albino. Though the pied rat is very close to the albino in many respects, yet there are differences between the two strains, and it will be of the greatest assistance in the more refined studies on this animal—studies which are already upon us—to know exactly the form employed, for it is increasingly evident in the biological field that before giving any results, the animal studied should be precisely named.

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### THE SCIENTIST AND AN INTERNATIONAL LANGUAGE

At the general meeting of the American Philosophical Society, held in April, it was my privilege to present a paper on "The scientist and an international language." This will appear in the *Proceedings* of that society; but as the subject seems to have attracted some attention on the part of scientists and of the public press, I should like to lay the matter before the members of the American Association for the Advancement of Science. My thesis is, that as the scientist is nowadays overworked by the necessity of learning a considerable number of languages in order to read the literature of his field, he needs a single international medium, in which publications intended for or deserving of an international clientele should be published; further, that Latin is the logical choice for this use.

Latin had such an international use until nearly the end of the eighteenth century, but by that time was displaced by English, French and German. Today, with the recrudescence of certain minor linguistic units and the increased nationalistic spirit of certain larger ones, we face a time when scientific publications of value may appear in perhaps twenty languages. The task even now has become too heavy, and many publications of value remain inaccessible or unknown to those who should be able to avail themselves of them. A common medium must be sought, either a modern language or Latin or an artificial language.

For the natural scientist, the *sine qua non* in his choice is that the international language should convey the thought with objective certainty. Any artificial language can show no such objectivity; but

Latin is unsurpassed in this respect. Further, the technical terminology of virtually all sciences in most of the modern languages (as well as the artificial languages) is drawn from Latin or from Latinized Greek; Latin, therefore, has the common international vocabulary of science. The inflections of Latin, though by some they are considered a disadvantage, in reality give a greater precision in the indication of the relations amongst the words than is possible in a language which has a minimum of forms and depends largely upon word order to show those connections. Finally, Latin is even to this day the international language of the zoologist and of the botanist in the names of animals and of plants, for the anatomist in his entire technical terminology, for the physician and the pharmacist in the writing of medical prescriptions, for the chemist in the names of the elements, etc.

Yet, naturally, whatever may be the international language used by the scientists, it will not be his sole medium of publication. Rather we should look to see, in the international language, only abstracts of arguments and results which have been published in other languages; some longer articles of truly permanent value; and those few books which are epoch-making in their fields.

Such, in brief, was my presentation. But my argument as to the advantages and the availability of Latin can be appreciated properly only in the full form of the paper; I could give here but the salient points. Naturally, I do not fancy that all scientists—and I am thinking throughout of those in natural and physical sciences—can now read, much less that they can write, Latin; few persons there are who can write for publication in other than their mother tongue. But all scientists now learn to read from one to ten foreign languages; and if there were an agreement, even though only a "gentlemen's agreement," that Latin should be the chief international medium, they would give Latin a preferred place in their study of foreign languages. The starting point for this alleviation of the scientist's toils might well be an international review expressed in Latin, containing summary accounts of publications in all lands and languages, which pertain to some one science or to some one group of kindred sciences.

I should be glad to enter into correspondence with those who are interested, whether or not they agree with me.

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## INSECTS IN THE CALIFORNIA TAR TRAPS

SEEPAGES and springs of petroleum from subterranean sources occur in many places in California

and have existed at least since early Pleistocene time. As the oil meets atmospheric conditions the more volatile constituents pass away and leave a black, viscous, asphaltic tar. Many of these seepages are "alive" to-day and form slow moving streams with occasional pools of considerable size. The brilliant mirror-like surface of the substance looks strikingly like placid water and in this way has "fooled" the animals of the region for a geological period.

Mammals and birds particularly have been attracted to these apparent water holes probably most often to quench their thirst, take a bath or a rest on the quiet surface, but other times to feed on these same unfortunates. Once mired in the sticky tar, escape was practically hopeless and vast quantities of bones have accumulated in the more favorably located "traps." Most famous of these are the ones on Rancho la Brea in Los Angeles County. The birds and mammals of the Pleistocene have become well known from the collections made there and through their strangeness serve to illustrate forcibly the vast change in fauna which has taken place in the region.

Many other of these tar deposits exist in the state, and it is possible that some of them may rival the famous ones of Rancho la Brea as prehistoric traps. During a recent brief examination of one of these near the town of McKittrick, in Kern County, I was surprised at the enormous numbers of insects preserved beside bones of extinct mammals. Most of those seen in a hasty examination were beetles and in many cases the parts appeared to be disassociated but excellently preserved, even to the iridescent colors. It is not likely that this is the first observation of the occurrence, but attention is here called to it in hopes that entomologists may become interested in the comparison of the Pleistocene insect fauna of the region with the birds and mammals.

It would be well to add that the tar is just as effective in the capture of organisms to-day as it has ever been. In one canyon where there was a "live" seepage a small pool of tar not more than a dozen feet across was so thickly bestrewn with a species of large water beetle that a manufacturer of fly-paper would certainly look upon the sight with envy. In some places there is, therefore, in all probability, a practically continuous accumulation from at least early Pleistocene to the present time.

G. DALLAS HANNA

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## SCIENTIFIC BOOKS

*Biomathematics, being the Principles of Mathematics for Students of Biological Science.* By W. M. FELDMAN, London, Griffin and Co. xix + 398 pp.

As W. M. Bayliss points out in his Introduction