for study by the Botanical Garden of Leningrad, have been determined by Associate Curator Paul C. Standley, of the botanical staff of the Field Museum. Included were many specimens collected more than one hundred years ago and some obtained by the French botanist Aublet, who published in 1775 the first important work relating to the plants of South America. The Botanical Garden of Leningrad also sent to the museum in exchange more than one hundred plants of the same family, collected in Brazil by the well-known botanist Riedel and of great historical importance.

DISCUSSION

EUPHANY

IN the current number of the *British Journal of Psychology,* Professor T. A. Pear proposes to introduce the term "euphasia" to designate "the ability for deliberate and adequate statement of fact." One recognizes at once the great need for a technical term for this concept, but the term "euphasia" is unavoidably associated with terms of the same root in mental pathology, such as aphasia and disphasia. To avoid this, I wish to substitute the word "euphany" with its legitimate adjective "euphanious," the term being derived from the Greek word *phaino* which means "to say," "to reveal" or "to make clear," strengthened by the prefix "eu."

The term "euphany" may, therefore, be defined in terms of two concepts, namely, deliberation and adequacy of statement. Psychologically, deliberation involves a clarifying of percepts and concepts involved; abstraction in the form of clearing the ground by reviewing upon critical evidence all the plausible alternatives; generalization in which the issue is made sharp and clear by rejection of irrelevant issues; the recognition of meaning in the establishment of the relevancy of the clarified concept, and finally, decision which results in the expressed judgment or act. The term "adequate" merely reenforces this procedure by applying it to the one issue in hand.

The need for this word is felt, particularly in the statement of the goal of higher education and in the evaluation of progress toward this goal, as euphany is the principal objective of training in scholarship and the power of expression. The end of all science is classification, and euphany is the capacity for adhering rigidly and deliberately to classified concepts. In it the educator should set a model. To say that speech or writing is euphanious is to pay it a high and specific compliment.

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NOMENCLATURE

MUCH of our discussion about nomenclature is apt to be beside the point, as very few workers have a conception of the enormous task confronting the systematists. The number of insect species living in the world at the present time has been variously estimated at from 1,000,000 to 10,000,000, and one person's guess is as good as another's. An even better estimate may be secured by taking a census of a smaller group. I have been interested during the last twenty years in making an index to the literature dealing with the insects of the order *Homoptera,* families—Cicadidae, Membracidae, Cercopidae, Cicadellidae (Jassidae) and Fulgoridae. This index now occupies one hundred thirty-two 3 x 5 drawers in my office. A couple of stenographers, an assistant and I are too busy in our spare moments indexing the new literature as it is published to count the number of cards in this index, but making a rough and ready estimate, there are about 150,000 references to about 30,000 species distributed in 5,000 genera. This is a small order of insects, and it is doubtful if considering the world as a whole we know more than one third of the species. The European fauna has been fairly well studied, so has that of North America, north of Mexico; but Mexico, Central America, the West Indies, South America, Africa, Asia, the East Indies and Australia have barely been touched. I am bold enough to predict (because I will be dead and this note will be forgotten long before the task is completed) that the discovery of the remaining species will change our concepts of things nomenclatorial more than they have been changed during the past 172 years. Yet, Linnaeus described in this group of insects in his famous Tenth Edition 1 genus and 42 species! In spite of these facts we hear on every side a plea for the return to the Linnean concept of genera and stability in nomenclature. What kind of a genus would it be with 100,000 or even 30,000 species in it? And how can there be any stability when only about one third of our territory is known? Why expect stability in anything? Even the material universe around us is not stable. Thirty years ago as a student I was told that the atom was the ultimate particle of matter beyond which there was nothing; yet to-day we float in a sea of electrons and protons. And only day before yesterday I listened to a physicist lecture on the wave theory of matter. No! There will be growth in our ideas of taxonomy and systematics as long as there are taxonomists and systematists.

In the Homoptera, Linnaeus knew nothing about wing venation, genitalia and other morphological

characters. But to-day no careful student would think of describing genera and species in this group without careful study of these characters. What of the future? Just as important characters await discovery, most, if not all, of our present concepts of genera and species will fade away before this broader knowledge like mist before the rising sun. In talking to some zoologists it seems to me that their conception of stability consists of a desire for the retention of the names that they learned, some of them 60, some 40, some 20 and some 10 years ago.

I remarked to a friend the other day that the whole thing reminded me of the embarrassment that we are sometimes confronted with in these days of easy divorce. We can never be sure whether the lady we are talking to is Mrs. Smith or Mrs. Jones, but we can be sure that it is the same person we knew for a long time as Mrs. Johnson. New names are embarrassing and confusing, but the true systematist can offer no escape from this confusion.

There is another idea prevalent in the minds of many biologists that needs to be corrected. For want of a better name I shall call this the pill-box in nomenclature. It runs something like this. If our conception of an animal fits a certain size pill-box it is a species; if it fits a larger box it is a genus. All that remains is to fit the animals in their appropriate boxes. All systematics degenerates, therefore, in the minds of many biologists to a kindergarten game of fitting triangles, squares, circles, *et cetera,* into appropriate openings. But the matter is hardly as simple as this. No one has defined the terms, genera and species. Concepts, especially concepts as varied as these, do not lend themselves to being crammed into pill-boxes. These objects that we call species are about as complex by comparison as the mosaic on the stairway of the Library of Congress. And it is, therefore, a little difficult to fit these complicated patterns into the appropriate openings in the general scheme of things. Stability won't do it. Stability simply puts many a square peg in a round hole and *vice versa.*

Dr. Gleason's two principles[1] won't do it, for no group of more than two systematists would ever agree as to what constituted a forgotten or nearly forgotten name. For the lines separating names in use, nearly forgotten and forgotten are as non-existent as other lines in nature; they are man made and, like all other boundaries, subject to shifts. Hence, good-bye stability. The second principle, that of making no changes unless the author believes he is thereby adding to the sum total of human knowledge, may be needed in certain fields of science, but in systematic zoology—never. All systematic zoologists (even the mythical Dr. X who discovered that the name of the cow should be *Equus caballus* and the name of the horse should be *Bos taurus*) know that they are adding to the sum total of human . . . (excuse me, I almost wrote confusion) knowledge.

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[1] SCIENCE, 71: 459.

ADMIRAL WALKER'S APPRECIATION OF THE WORK OF COLONEL GORGAS

MY attention has to-day been called to an article in SCIENCE for May 30, 1930, written by Dr. John F. Stevens, formerly chief engineer of the Panama Canal, which is couched in such vague terms that I feel he may be doing an unintentional injustice to my father, Rear Admiral John Grimes Walker, the first chairman of the Panama Canal Commission.

Dr. Stevens writes of "the condition of affairs on the isthmus during a part of the year 1905" and speaks of his arrival there in July of that year and what he then found to be the situation—"the then chairman of the Isthmian Canal Commission accompanied me on my first visit to the isthmus, remaining there but five days, as the situation did not appeal to him. . . . Neither the Governor nor the chairman had the least faith in the efficacy of the mosquito theory—at least they so emphatically advised me at once, and their actions confirmed their words."

As the commission of which Admiral Walker was chairman resigned in a body on March 30, 1905, these remarks evidently do not apply to him but to his successor in office; as, however, few people are likely to remember the exact date of the formation of the new commission and as Admiral Walker's name has been long and widely connected, not only with the Panama Canal Commission but also with the preceding commissions which carried out all the vitally important preliminary investigations and studies, I feel that Dr. Stevens' omission of all names in making the foregoing statements is extremely misleading.

Admiral Walker had followed with deep interest Colonel Gorgas' wonderful work in ridding Cuba from yellow fever and was so firmly convinced of its value that when President Roosevelt sent for him and offered him the chairmanship of the commission being formed to build the canal the first condition he made was that Colonel Gorgas should be put in charge of the medical and sanitary work on the isthmus. As to the reference to "the then chairman's" stay of only five days on the isthmus "as the situation did not appeal to him"—to any one who knew Admiral Walker this in itself would prove that Dr. Stevens was not referring to him, for he was on the isthmus