

ture recorded at the bottom (8,080 feet) of the well in Westmoreland County, Pa. The average increase in temperature from the surface to the bottom of this well is about 1.76 degrees Fahrenheit per 100 feet. The data for all the wells show that the average increase per 100 feet varies considerably and the rate of increase is not uniform.

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### THE MEIGEN 1800 NAMES AGAIN

I EXPECTED my somewhat lengthy discussion of the Meigen 1800 names<sup>1</sup> to be my final one on the subject, but the recent article by William F. Rapp, Jr.,<sup>2</sup> leads me to believe that it was not so widely read as I had hoped. It is rather astonishing that Mr. Rapp finds Opinion 152 of the International Commission on Zoological Nomenclature so important, since it is merely a restatement of Opinion 28. The only difference lies in the fact that there is now a greater body of Opinions, particularly number 46, on which to establish the validity of names which were declared available in 1910.

Opinion 28 was not ambiguous, nor did the commission fail to answer, as well as it was in its power to do so, the question that J. M. Aldrich asked relative to the validity of the Meigen names. One should realize that it was impossible for the commission to state that the Meigen 1800 names were valid, since this would have involved an exhaustive examination of each name to determine its possible homonymy. This was the duty of the dipterists. It is admitted that until Opinion 46 was published in 1912 the status of binary names was in doubt, but after that date it was only necessary for the dipterists to determine the properly designated genotype for each name and to use the name for the genus to which that genotype belonged. A number of workers did this and important publications, particularly in Europe, followed the Rules. The only alternative, if one believed in following legal procedure, was to request suspension of the Meigen 1800 names under the plenary power of the commission. In the 37 years since Hendel resurrected the names I do not know of a single request for suspension of these names having come to the commission. Abrogation of Meigen's 1800 paper is unthinkable, in view of Opinions 28 and 152, although it is possible that a few of the names that have not entered the literature to any extent, or that have been misapplied, might be favorably considered for such action.

The fundamental questions are—Should we accept priority as the basic principle on which zoological

nomenclature must rest, and should we accept the genotypes that have been designated for the Meigen 1800 names in accordance with Opinions 46 and 65? The answer to the first would seem obvious. Unless priority is accepted, the way is left open for any one to use whatever names suit his fancy. If we are to have stability, the principle of priority must be jealously guarded, and any suspension of the Rules should be looked upon as weakening the nomenclatorial structure. The answer to the second question is clear except in those cases where there is serious doubt as to the fitness of the genotypes. Where it can not be proved that the genotype designation is incorrect, we must assume that it is correct; where there is good evidence that an error has been made, it becomes necessary, if a change of name appears desirable, to place the case before the commission in accordance with Opinion 65. It is my opinion that we will achieve stability quicker if we accept the genotype designated for each one of the genera and cease to worry about Meigen's descriptions.

One more point should be raised. Mr. Rapp speaks of "Diptera nomenclature." It should be stressed that the commission is dealing with zoological nomenclature and that any principle laid down by the commission applies throughout the animal kingdom in exactly the same manner. It is evident from the 58 per cent. affirmative reply to Edwards's second question, "Do you consider that the omission of specific names renders the Nouvelle Classification names invalid?" that many dipterists either did not know of Opinion 46 or chose not to follow it. It is the duty of zoologists to learn and apply the Rules after they have been made by the commission. Only in this way can we hope to attain stability.

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### RE-EMPLOYMENT OF BIOLOGISTS NOW IN THE ARMY AIR FORCES

DURING the war approximately two hundred physiologists and general biologists have been serving in the Army Air Forces as Aviation Physiologists. These officers have discharged important duties in training, research and testing programs. With the close of the war, they are gradually becoming available for release from military duty, and fifty or more of them will desire teaching or research positions in civilian institutions.

The officers were chosen for this service after a careful consideration of their scientific training and their personal qualifications. Accordingly, they are biologists with wide scientific interests, demonstrated

<sup>1</sup> A. Stone, *Ent. Soc. Amer. Ann.*, 34: 404-418, 1941.

<sup>2</sup> W. F. Rapp, Jr., *SCIENCE*, 102: 17-18, 1945.

qualities of initiative and leadership and marked aptitudes for teaching or investigation.

During their service in the Army Air Forces the aviation physiologists have had an opportunity to develop certain of those talents and to acquire experience along other lines which should contribute to their success in civilian scientific activities. It is worthy of mention that many of them assumed difficult administrative duties which they handled with notable success. It has been necessary for them to instruct large groups of Air Forces personnel in the biological problems of flight and to arouse the interest of men with little knowledge of elementary science. It has been their duty to apply biology to the practical problems of technological warfare. Of especial significance is their broadened intellectual horizon and a new interest in problems of human biology. This wartime training of a carefully selected group of biologists will enhance their value to teaching and

research groups with which they now become associated.

Among the men who are seeking civilian positions there are general physiologists, zoologists, mammalian physiologists, entomologists, embryologists, pharmacologists, anatomists, biochemists, plant physiologists, botanists and museum curators. Each of them holds a doctorate from a well-known university.

The Army Air Forces appreciates the notable effort these scientists have made to establish and execute a pioneer program of great value to our military effort. In order to aid them in their return to civilian occupations, we invite correspondence from teaching and research institutions which have positions available for such individuals.

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## SCIENTIFIC BOOKS

### CULTURE GROWTH

*Configurations of Culture Growth.* By A. L. KROEBER.  
882 pp. University of California Press. 1945.  
\$7.50.

In general the reviewer finds himself in agreement with the author on the following conclusions regarding the "higher values" of esthetic and intellectual endeavor: (a) that they appear in bursts or constellations of genius; (b) that "geniuses are the indicators of the realization of coherent pattern growths of cultural value" (p. 839), which follow from the belief "that all human beings are the products of their culture to a much greater degree than we ordinarily imagine" (p. 838). The continuation of the preceding sentence, "and that cultures appear to grow in patterns and to fulfill or exhaust these," however, raises questions in the reviewer's mind which this book does little to answer. It is true that the author adds, "Why cultures behave in this way, especially in their intellectual, esthetic, and nationalistic aspects, is not clear; but it seems to be one of their most distinctive properties" (p. 838).

This savors a little of the mysticism of which he earlier, and rightly, accuses Spengler. Is there some pattern of culture growths ordained which must be fulfilled or exhausted? I see no reason why we should believe this to be the case, why "accidental" events should not be allotted a large share in the determination of cultural patterns. I use "accidental" here not in the sense of uncaused events but rather in the sense of events which, with existing knowledge, can not be seen as the necessary outcome of the existing historical situation. As one who likes to

believe he is a scientist I can see no place either for belief in "pure accident" in human history or for an ordained order of development which man can not change by his own actions. Whether he can change it as he would wish is another matter.

Just as Kroeber's view of genius leads him to assume that most people with the innate capacity of great cultural achievement are "never realized" because there is nothing in their cultural inheritance which demands their particular genius, so one might argue with equal cogency that there is many a period in history when cultural achievement is low because there does not happen to be some genius to synthesize the cultural patterns into some structure which posterity will recognize as significant. In other words, I can accept Dr. Kroeber's interpretation of the role of genius in the development of culture without accepting any particular growth of culture as inevitable in the sense that man can not modify it if he so desires. Perhaps these are contradictory conceptions, but they do not seem so to me.

But if there is something inevitable about the growth of any particular cultural configuration and if it is the fulfillment of some promise contained in its early conception, then this compulsion must be exercised by the customs, attitudes of mind and institutions of the given community and they in turn must have something inevitable about their development. That this is the case I can not believe, nor do I think Dr. Kroeber believes this; hence, I am puzzled to account for what appears to me to be a frequent reiteration of the idea that cultures fulfil and exhaust their patterns. If all this means is that when cultural