of formation is directly proportional to the number of atomic unions in the molecule.

3. The absolute heat of formation of any organic compound is a multiple, by a whole number, of a single constant. The latter is identical with the neutralization constant, and has a value somewhere between 13,700 and 13,800 calories.

4. The thermal value of a union between two atoms is independent of their masses.

5. The absolute heats of formation of corresponding chlorides, bromides and iodides are equal.

The last conclusion at once suggests a correlation between thermochemical data and Faraday's law. From this point of view, the latter may become part of a wider generalization whose details are yet to be worked out.

Mr. J. D. Thompson then explained the principles of the 'Reclassification of the Science Section at the Library of Congress.' All the books in the library are to be grouped in twenty-six classes, lettered A to Z; Q is assigned to science; a second letter gives the first subdivision, and then follow numbers, as Q A 503; in a second line the familiar Cutter author-abbreviations are given. The division is to be rather minute since access to the shelves will be liberally granted to students. It is expected that ultimately the library will have a card catalogue of all the other Washington libraries.

C. K. WEAD,
Secretary.

DISCUSSION AND CORRESPONDENCE.

GUESSES ON THE RELATIVE WEIGHTS OF BILLS AND COINS.

IN SCIENCE for April 25 an account was given by Mr. J. Franklin Messenger of certain results obtained in reply to the question, 'How many one-dollar bills will equal in weight a five-dollar gold piece?' The answers revealed a quite startling notion either of the heaviness of the coin or of the lightness of the bill, the average guess being 2,291 for 97 students of Columbia University and 2,749 for a class of students in the University of Kansas. The correct answer should have been about 7. The writer of the article used only those results that were obtained from male students, somewhat disparagingly remarking that he had omitted the replies of the women because of their great variation. Since the feminine power to make reliable, or at least utilizable, estimates of this nature was thus called in question, I determined to put the same query to a class of 175 students in Smith College. The results were by comparison so gratifying that it may be of interest to state them.

A few had heard of the question before and were more or less sure of the correct answer. Their replies were, of course, excluded, leaving 162 replies for consideration. The average estimate was 108, as compared with the above given figures, 2,291 and 2,749. But, as Mr. Messenger rightly says, it is not so much the average as the median that is here significant. This was found to be 25, as compared with 45 for the Columbia students and 99 for the students of the University of Kansas.

Since a five-dollar gold piece is a relatively unknown quantity to those of us who live in this part of the country, a further question was asked as to the number of one-dollar bills requisite to equal in weight a fifty-cent piece. The average of 162 replies was 161.7, the median 50. The correct number is between 9 and 10. Familiarity with the coin seems not to have added materially to the correctness of the estimate.

I am not at all sure that such investigations as this disclose any profound psychological laws, but the results here given may serve to correct the error that women are less capable than men to make estimates of this sort.

A. H. PIERCE.

SMITH COLLEGE.

A POINT IN NOMENCLATURE.

MORE than once lately, lacking time to explain my views on zoological nomenclature in detail, I have stated to correspondents that they agreed with those of Dr. D. S. Jordan, supposing the latter to be well known. I am, therefore, somewhat distressed to find Dr. Jordan and Mr. Fowler (*Proc. U. S. Natl. Mus.*, XXV., pp. 266–268) adopting a course in nomenclature which seems to me inadvis-

able. As the case is similar to others which have to be decided one way or the other, it is worth while to discuss it briefly.

Schlegel in 1846 described a fish from Japan as *Monacanthus oblongus*. It turned out, however, that his description really covered two entirely different fishes. The description of the adult related to a *Pseudomonacanthus*, that of the supposed young, and also the figure, to a *Stephanolepis*. Now, I should say that in such a case the description purporting to relate to the adult fish should go with the name, although as a matter of fact the alleged young may also have been adult. This would be because (1) the author's conception of the species would surely be primarily based on the adult, and (2) the description of the adult presumably would in all such cases have priority of place over that of the supposed young or of the plate figuring the latter.

Supposing, however, that these contentions are not held valid, I would then say that the first name given to one of the two species should hold, the residue (*i. e.*, the other species) carrying the original name. Now it happens that the first new name given was *Monacanthus Broeki*, Bleeker, 1857.* This name pertains to Schlegel's supposed young, so on both counts the name given by Schlegel belongs to the fish described as adult. Nevertheless, Dr. Jordan and Mr. Fowler, following Dr. Günther, give the Schlegelian name to the fish described as the young, and call the other by Günther's name, *modestus*, proposed as late as 1877. According to my view, the fishes should be:

1. *Stephanolepis Broeki* = *Monacanthus Broeki*, Bleeker.

2. *Pseudomonacanthus oblongus* = *Monacanthus oblongus*, Schlegel (part); = *M. modestus*, Günther.

It is also to be remarked that the name *oblongus* is more suggestive of the latter than of the former fish, judging from the figures.

T. D. A. Cockerell.

East Las Vegas,
New Mexico.

* According to Jordan and Fowler, *M. frenatus*, Peters, 1855, is possibly applicable; if so, it is an earlier name for the same fish.

Comparative Strength of Animals.

To the Editor of Science: In the letter entitled 'The Strength of Ants,' in your issue of September 26, it was observed that an ant weighed 3.2 mg. and a grasshopper which it was dragging weighed 190 mg. If one desires to magnify the ant and calculate the corresponding strength which might be expected, it appears that if the animal be doubled in lineal dimensions its weight will be multiplied by the cube of two or 8, while its strength, which is doubtless determined by the cross-section of its muscles, will be multiplied by the square of two or 4. Now suppose that this small animal is multiplied in size 300 times in length and correspondingly in breadth and height, so that its weight will approximate to 3.2 mg. multiplied by 300 cubed = 86.4 kg. Whereas if its strength is represented by a weight of 190 mg., this multiplied by 300 squared = 17.4 kg. These figures will correspond to a man weighing 190 pounds dragging 38.5 pounds, a proportional strength with which we are very familiar.

F. P. Dunnington.

University of Virginia,
October 20, 1902.

A Biographical Index of the Men of Science of the United States.

At the request of the executive committee of the Carnegie Institution I am compiling a biographical index of the men of science of the United States. It is intended in the first instance for the use of the institution, but it will probably also be published. The index should include all those who have carried on research in science, the term, however, being used in its narrower sense so as not to include on the one hand philology, history, economics, etc., nor on the other hand medicine, engineering, education, etc., except in so far as these applied sciences may contribute to pure science.

During the summer I sent to a large list of names (some 8000) a blank with the request that it be filled in and returned. The blank asked more especially for information in regard to the scientific career and work of those to whom it was addressed. The re-