showing affinity to the suborder Thecata. More recent authors were inclined to the view that the family should be included in the Athecata.

The Emperor obtained abundant specimens of two species of this family from Sagami Bay, and assigned one of them to *Clathrozoon wilsoni* Spencer, and the other to a new genus and species, *Pseudoclathrozoon cryptolaroides*. He describes these two species in detail with many illustrations including a color sketch of a specimen of the new species, many photographic figures of whole colonies of the two species and of sections of fixed specimens indicating zooids, skeletons, and coenosarcs, as well as fine diagrammatic figures of the structure of the colony, and a map of the part of Sagami Bay from which the specimens came.

The descriptions are given in both English and Japanese, in more detail in the former language. What is the most salient of the new discoveries made by the author is the presence of gonothecae containing gonosomes of the leptomedusan type. By this discovery the systematic position of the family Clathrozonidae is settled as to be included in the suborder Thecata.

In the preface of this memoir, cordial appreciation is given to many who have given assistance to the author in one way or another. Outstanding among the scholars was the late Hirotarô Hattori, who was the Emperor's tutor and consultant in biology for more than 50 years. The preface closes with the following words: "I should be more than happy if the present work of mine, subject to correction by interested scholars, could contribute even in the smallest way to the progress of academic studies."

TAKU KOMAI

Kyoto University,
Kyoto, Japan

Negroes at Michigan

The findings of the Coleman Report (*1*) should be considered before adjudging that the University of Michigan is for "rich white students" as noted in Nelson's elegantly entitled report "Michigan: Ruckus over race has relevance to other universities" (2 June, p. 1209). The report points out that there is a difference of one standard deviation between the median scores of large numbers of white children as compared to large numbers of Negro children (p. 20, summary report). The University of Michigan, like any other good university, tries to screen its candidates for admission, admitting, preferably, only those making scores that fall within the upper quarter of the high school graduating class.

By use of standard statistical tables we can compute that for a one S.D. difference in the medians the 75 percentile of the normal (or white) group is overlapped only by the 95 percentile of the Negro group. If Michigan's Negro population were 10 percent and if the entire student body of the University of Michigan came from students with intelligence test scores in the upper 25 percent of students within the state, we would expect to find (.1) (.05) or (.005) of the student body or 150 of the 30,000 students to be Negro. The article estimates that 450 students are Negro, so if there is any discrimination against Negro students, these figures do not bear it out.

RAPHAEL G. KAZMANN

611 College Hill Drive,
Baton Rouge, Louisiana 70808

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The Fuzziness of "Fuzz"

The cynic has said that electron microscopes are adding more problems for the working biologists than they are helping to solve. On the plus side, more details of fine structure are being revealed as more varieties of cells are examined by improved methods of higher magnifications. Even if this is no more than extending the frontiers of our ignorance, as one skeptic puts it, whenever a new morphologic feature comes to the attention of the electron microscopist a major problem is presented to him; he needs to give the newly discovered thing an identity—a name, and this problem is often resolved by the use of the word "fuzz."

The outer surfaces of cells reveal complexities of structure when examined with high resolutions of the electron microscope. Often, fine filaments or thread-like structures extend outward from the cell membrane. First recognized on the surface of gall bladder epithelium by Yamada, the filaments were given the name of "Anten-

nullae microvillares" (*1*). Bennett considered the evidence that the filaments and cell surface materials were carbohydrate to be substantial (*2*). He coined the term "Glycocalyx" (literally "sugar-cup" or "sugar-shell") for the cell surface structures, using glycocalyx in the sense of "sugar husk" or "sugar calyx," and analogous to the covering layers of seeds or flowers.

One of the first appearances of the word "fuzz" as a replacement for "antennullae microvillares" and "glycocalyx" occurred in an article by Revel and Ito entitled "The surface components of cells" (*3*):

> One extremely common type of surface coating consists of exceedingly fine filaments extending radially from the plasmalemma. Such filaments were originally described by Yamada (1955) as "antennullae microvillares" on the free surface of the gall-bladder epithelium. At present, this type of surface specialization is commonly referred to as "fuzz" since it imparts a hirsute appearance to the cell membrane. The thickness of the fuzzy coat and the amount of the surface membrane covered by it varies greatly. While some free living organisms such as the amoebae may be completely invested by such a layer, only the free surface of certain epithelial cells of higher organisms seem to have this layer. In certain cell types such as ova, erythroblasts, and Kupffer cells, a material similar to fuzz occupies small patches, or lines small invaginations of the cell surface. In other cells, while there is no visible surface coating, the presence of one can be inferred from the results of histochemical tests.

In reviewing a series of articles for a scientific journal in 1966, I encountered not only the word "fuzz," but also "fuzzy" and even "fuzz-like." At this point the threat of "fuzzoid" became real and I wondered whether electron microscopists were becoming a subculture (like teen-agers and musicians) and developing a language of their own by the use of ordinary words in extraordinary meanings. Webster defines "fuzz" as (i) a puffball; (ii) a mass of fluffy particles or fibers, as the beard of an adolescent boy; (iii) a blurred effect; and (iv) slang, a policeman or officer of the law. In electron microscope use, the meaning closest is a mass of fluffy particles or fibers.

There is little serious objection to the introduction of new terms for new appearances, even a cumbersome term like "Antennullae microvillares." The exuberant tropical jungle of intracellular inclusions has generated such terms as "autophagosomes," "cytosegrosomes" and "cytosomes" and other "-somes" ad infinitum if not *ad nauseam*. Such manufactured language seems reasonable although one can look forward to *ad hoc* study groups, and eventually national and international congresses to straighten out this nomenclature. What is objectionable in the use of the word "fuzz" by the electron microscopists is that it is taking over an ordinary word and using it in a very special meaning. My own belief is that the use of this word should be discouraged by editors because of the inappropriate application of a word describing something seen with the naked eye to structures visible only with the electron microscope.

Consider the future. I can imagine a conference given over to the study of such specializations of the cell surface and what can it be called except "The Conference on Fuzz"? As areas of study narrow, it is quite possible that enough investigators will make these specializations of the cell surface their own fields of study leading to the formation of a "Society for the Study of Fuzz" which in time might produce a *Journal for the Study of Fuzz* or the *Fuzz Journal.*

Such absurdities aside, the important point is that newly discovered structures require new descriptive terms. The "bonds of intelligibility" which link the past and the present with the future depend on special identifications of specific features or structures by the use of appropriate words. Any science is in a sense a language with a content of ideas, the language consisting of a mutually agreed upon set of meanings for the corresponding set of words. How does "fuzz" fit into this concept?

It is by no means certain that any sort of outcry or derision can remove the use of "fuzz" from the jargon of the electron microscopists. Indeed I am afraid that any serious criticism will only strengthen and reinforce its use. Still, one can wish that someone with an adequate vocabulary would devote enough time to find a suitable substitute. The word "fuzz" is unclear in meaning; one of its characteristics is "fuzziness."

J. F. A. McManus
Federation of American Societies for Experimental Biology, 9650 Rockville Pike, Bethesda, Maryland 20014

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