

vitro showed vigorous twitches, even in preparations in which the culture medium had not been changed.

I have observed that threads of fibrin when affected by the local application of heat will also contract and quickly extend again. The muscular contractions observed are not dependent, however, on any contraction of the medium around the cell, since they occur as well in the fluid of blood serum as in the coagulum of plasma, and are much more decided and vigorous than the contractions similarly evoked in threads or sheets of fibrin. Similar experiments with muscle fibers isolated from adult amphibians gave negative results, even though the fibers were kept for only a few days in hanging drop cultures.

While isolated larval muscle cells gave little evidence of further differentiation, it was found that in several larger pieces of the same larvæ, containing a number of different tissues, muscle fibers became more elongated, and had differentiated in other respects much as in the course of normal development. In one set of experiments tails of *Diemyctylus* larvæ were cut into several pieces which were kept in Ringer's solution. These pieces were seen to undergo differentiation in many ways. Through the absorption of water they increased greatly in size. The muscle fibers of these pieces became not only more elongated, but more completely fibrillated. It is probable that tension is required to cause myoblasts to increase in length, and this tension was supplied, in the pieces observed, by the general increase in size. It is not improbable that other stimuli arising from the association of the myoblasts with other cells occasioned their further differentiation in structure.

The persistence of larval muscle fibers in an active condition for eight months is a fact of interest in relation to the tendency of the muscles of the adult animal to atrophy when deprived of their nerve supply and hence of their usual stimuli to functional activity. The dependence of muscle upon nerve is a secondary acquirement, for several experiments have shown that the early differentiation of myoblasts proceeds in a normal way after the

removal or destruction of the nervous system. In the young larvæ from which the muscle cells were isolated in my experiments the muscular tissue had not come to depend, to any considerable extent, upon nervous stimulation.

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FIAT NOMENCLATURE

In the "Eighth List of Generic Names (Mammals) under consideration in connection with the Official List of Zoological Names," published in *SCIENCE* for July 10, we get an enlarged view of what the International Commission is expected to do with its "plenary power authority." Though only sixteen names are now presented for "fixation by fiat," large possibilities are revealed, since thousands of such cases could be developed.

The orang, evidently the pet of the menagerie, is allowed to steal the generic name that belongs to the Barbary ape, and the specific name that belongs to the chimpanzee. As the Barbary ape is the type of the genus *Simia* Linnæus, the generic name used for the orang will need to be distinguished as *Simia* Fiat. The orang's specific name must be *Simia satyrus* Fiat, *Simia satyrus* Linnæus being the original name of the chimpanzee. It would be interesting to know why the orang should discard his original Linnæan specific name *troglodytes*. Fiat will easily become one of the most prolific authors, with such facilities for displacing clearly established names, including those of Linnæus.

It must be a fine thing to have this "plenary power authority," and feel able to correct the errors and improprieties that are always creeping into nomenclature. At last we are in the way to follow the golden counsel of Rafinesque, to keep on giving names until we find the most appropriate. Fiat, as we have seen, is to fix specific names as well as generic, and can also "fix the most classical form of the name, not necessarily that which was first used." Anything that seems "advisable" may be done. Thus:

An early reference by Pallas in connection with *Oryx gazella* makes it advisable to affix the name

Gazella to the gazelles before it is attempted to be used for the gemsbucks.

Of course the name *Gazella* would remain with the gazelles if Pallas applied it to them before it was applied to the gemsbucks, but if a suggestive passage in an older author makes it "advisable to affix the name" in advance of any formal nomenclatorial application, why need we hesitate longer to restore the classical names from Pliny, Virgil, Theophrastus, Aristotle, Homer, Solomon or Moses?

Such improvements may not appear to lie exactly in the direction of those that the International Commission was expected to supply, but why object to one good thing because we do not get another? It is evident from these proposals for "fixation by fiat" that the results reached by the International Commission through the "Code of Nomenclature" will not command the unqualified approval of the interested public. The underlying reason may be that the Code is not based on consistent principles, but incorporates certain imperfect ideas that happened to be current when the work was undertaken. The general substitution of the method of types for the method of concepts was then only beginning and the fundamental nature of this reform was not appreciated. In particular, there was a failure to see that the custom of determining the application of generic names through elimination was inconsistent with the method of types.¹

As soon as we admit that a name must relate to a type, and agree to treat this relation as inviolate, there are no problems to be solved by elimination. It is this that renders the method of types so superior to the method of concepts as a means of securing permanence in nomenclature. The application of a generic name is fixed as soon as the type species is determined, and does not depend upon the action of later writers. The historical names remain in their original places instead of being transferred to other groups, as

often results from elimination. The attempt to combine two methods that were essentially inconsistent developed so many complications that a court of experts seemed to be necessary, and the Commission was established. But now the "plenary power authority" relieves the Commission from the task of applying its own rules and allows names to be adopted or rejected as may appear "advisable."

Another advantage conferred by the method of types is the right to exclude generic names that were not applied to binomial type species. In our specific nomenclature we confine ourselves to binomial species, and there is the same propriety in refusing to admit generic names that did not have binomial species as types. Many of the well-known names that now figure in lists of *nomina conservanda* have been placed in jeopardy only by ill-considered revivals of obscure, abortive names that would have been left in oblivion if this simple requirement had been observed. With a code drawn in better accord with the method of types, which is now in use by nearly all systematists, there would be less need of "plenary power authority" and "fixation by fiat."

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MUSEUMS OF SOUNDS

If museums of sights, why not museums of sounds? The curator of that hot bed of new and improved varieties of museum ideas, the Children's Museum, in Brooklyn, New York, reminded me that a large number of the children who visited it were unable to get away from the crowded city during vacation, and stated that she thought a victor-victrola, installed in the museum with samples of the best music would be appreciated by these children and do them good. Some museum authorities might think this quite improper, and not at all dignified; although as a matter of fact some of our leading scientific museums do have study collections of phonograph records of Indian music; but in the way of public exhibitions a children's museum can freely do things which only a brave and radical scien-

¹ Cook, O. F., "Terms Relating to Generic Types," *The American Naturalist*, 48: 308, May, 1914.