
Letters to the Editor

Concerning Rains of Fishes

At the risk of seeming a very obdurate Sadducee I am afraid that I must persist in my incredulity concerning rains of fishes (*Science*, 1946, 103, 693). That many people have professed to believe in rains of fishes I am well aware. That many people have observed fish on the ground after a heavy rain may be. But no trained observer has yet seen quantities of fish coming down out of the sky.

Dr. Gudger says that these remarkable downfalls have been "scientifically attested." But what does he mean by this? He refers to "scientific men of high standing and veracity" who "did not witness the falls" yet professed to believe in them. But profession of belief does not in itself constitute evidence, however honored the professor. No man's "printed word" is "accepted today by scientific men" as conclusive proof of anything. It is the very essence of science that it should not be.

Dr. Gudger's evidence is all hearsay, and that often at second and third hand. His fullest account is James Prinsep's account of a Mr. Cameron's communication of the alleged depositions of some Indian farmers. Two of these witnesses state that some of the fish were "stinking and headless," and the one who gave the fullest account said that after the fish had struck him on the head he "looked at heaven" and "saw like a flock of birds flying up." The correspondent from Louisiana only states in effect that some fish had been found in boats that had been swamped in a high wind. What more likely?

The very nature of waterspouts, unfortunately, renders exact observation of them almost impossible, and hence little is really known about them. But such accounts as there are (as, for example, in Wenstrom's *Weather*. Boston: Houghton-Mifflin, 1942. Pp. 323-328) suggest that the cone is composed of spray or mist drawn down from the cloud and that such water as is drawn up from the surface of the ocean or lake or river by the vacuum—the only part that might possibly carry fish—would not be carried far across the land and could not possibly be mistaken for rain. Milman, in his *Meteorology* (New York: Macmillan, 1929. P. 342), says that "stories of large quantities of water being carried up from the sea into the clouds is pure myth."

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Why Is Taxonomy Ill-supported?

Fosberg and Diehl, in "Present status of foreign herbaria and museums" (*Science*, 1946, 103, 282), make several observations which are important to biological science and with which most botanists will heartily agree. I wish to comment on only one phase of the problem, mentioned by them in these words: "Systematic botany has traditionally been ill-supported." This is true, and

it will continue to be true, and deservedly so, as long as taxonomists maintain present principles and practices. Taxonomy is the only branch of science where this is true.

Rewards are bestowed, in taxonomy, for creating names and not for knowledge of the organism named. Some persons have renamed scores, hundreds, and probably even thousands of plants which they never saw and could not possibly recognize if they did see them, but the names so applied must be acknowledged under taxonomic rules, either as valid or as synonyms. No stigma or penalty whatsoever is attached to the creation of innumerable synonyms.

Permanent rights are accorded to the creator of a name, without regard for the general welfare of scientists. This is true whether the name be valid or one of the many kinds of synonyms; whether it was based on knowledge or ignorance; whether it represented an addition to, or merely confusion of, the existing knowledge; and wholly without regard to the inconvenience caused to tens of thousands of other workers. When a man wishes to patent an idea, under United States law, he must submit it to a jury of experts (U. S. Patent Office). If they determine that it is sufficiently new and different to warrant recognition (patent), he has to pay a sum of money to obtain such recognition. After all that, he gets exclusive rights for only 17 years—not forever.

Taxonomy has no required standards of preparation or fitness, yet its products may help or harm many. Anyone who wishes may name organisms, and the names must be recognized forever, either as valid or as synonyms. Schoolteachers must be trained and must pass examinations in order to teach even the three R's in the rural schools. Auto drivers, electricians, plumbers, and public accountants must be examined by experts and must obtain a license before they may operate. Dentists, doctors, lawyers, and ministers must be examined and certified before they can ply their trades. But anyone may apply Latin names to organisms, and the names automatically have permanent status in one or the other of two categories. The products of an ignorant, careless, or dishonest tyro may cause untold and continuing labor to many others much more able.

Taxonomy is the only science that openly appeals to, and openly rewards, the innate selfishness of man by guaranteeing the permanent association of his name with the organism-name he coined, whether it be of value or not. Chemists, physicists, geologists, mathematicians, physicians, and philosophers make discoveries and develop theories of immense importance to humanity, but we are under no compulsion to attach their names when referring to such discoveries and theories. Sometimes we do, in the case of a dozen out of tens of thousands (Boyle, Darwin, Einstein, LaPlace, Newton), but no rule compels it. What is the value of a single plant