Comments and Communications

Research Publication: An Addendum

Several important facts concerning publication in the field of physics have been brought to my attention since the appearance in *Science*, August 26, of the article "Research Publication: A Federal Responsibility?" In the belief that this additional information will be of interest to *Science* readers and that it is important to a fuller understanding of the publication situation in this leading scientific field, this brief addendum is made.

Physical Review. The publishers of the *Physical Review* have indicated that its situation is not as extreme as that of the *Journal of Chemical Physics.* They report that the *Physical Review* has at no time failed to publish promptly all creditable papers in the field of physics which are submitted and are proper to the journal. The accomplishment of this, to date, has been a matter of great pride to members of the American Physical Society. But it is also a great financial burden. The American Physical Society tells me that this undertaking is costing more than the society's current income can support. The society has met its publishing obligations for the past several years by using funds which it was able to accumulate during the war period. This year the *Physical Review* has managed, partly through outside aid, to keep abreast of the rising number of papers to be published. For 1950, drastic increases in dues and subscription prices have had to be decided upon without full certainty that even these will be sufficient.

Nuclear Physics journal? The suggestion made in the August 26 article that an adequate outlet in nuclear physics is not available has caused concern among the publishers of the *Physical Review.* They rightly feel that this would be too great a falling down on their responsibilities to be tolerated. Whether there should be a journal devoted exclusively to nuclear physics is a question that the managing editor of the American Physical Society and his advisers have had under consideration for some time. It is entirely possible that the step of dividing the *Physical Review* into a nuclear physics journal and a "rest of physics" journal will be taken. It is indeed understandable that there are many arguments against such a step and many for it. These have not yet been resolved. Meanwhile, the *Physical Review* should certainly be commended for having willingly accepted the great burden of providing an outlet for the increasing number of research papers in this and all other branches of physics.

The American Physical Society has excelled in an important task which must continue. That it needs help is apparent. That it is worthy of help is also apparent.

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I have read the article on research publication with decided interest and agree fully with the thesis that the government, which is appropriating such large funds these days for research work, should look to the end of the process and also provide adequate funds for publishing the results. Otherwise the research funds are largely wasted and the desired results are not obtained.

In this department we are going counter to the trend recommended and are eliminating means of disseminating scientific information. Two years ago the *Experiment Station Record,* which carried to its many readers each month the results of agricultural and biological research throughout the world, had to be suspended after 95 volumes because of a shortage of funds. This year at the end of the fiscal year in June the *Journal of Agricultural Research,* started in 1913, had to be suspended for the same reason. This journal carried only technical scientific articles on fundamental biological and agricultural research done here in the department and at the state agricultural experiment stations. I have been editorially in charge of this journal the last 25 years and I naturally regret exceedingly that its publication will not be continued. We always tried to maintain it on a high scientific and editorial plane and our efforts have apparently borne fruit. We have received many commendatory letters from research workers in this and other countries on its high quality. These have made us feel that our work was appreciated but they only added to the regret we have in seeing the journal discontinued. But such instrumentalities for the dissemination of scientific information must have financial support if they are to accomplish their functions. I therefore think that Miss Jurgens is on the right track in indicating the responsibility of the government in attaining desired objectives.

As I see the picture, those authorized to handle government budgets and make appropriations for approved projects will sooner or later be forced to give more attention to official channels of scientific publication.

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Catching Fishes with the Hand in India

On reading E. W. Gudger's article (*Amer. Naturalist,* 1948, 82, 281) "Catching Fishes with the Hand. I. In the Two Americas," and on learning from him that no records of this method of catching fishes in India have been found in the literature, I wish to narrate the following facts observed at widely separated places in India in the course of the last 32 years.

Punjab. During winter months at Lahore, Western Punjab, when the temperature falls almost to the freezing point, a catfish of the river Ravi, a fish locally known at *Khagga* (*Rita rita* Hamilton), seeks shelter among rocks and crevices at the bottom and goes into a semitorpid state. This fish possesses three very strong

spines, one in the rayed dorsal fin, and one in each pectoral fin. With these spines, the fish can inflict serious injuries and is, therefore, greatly dreaded by local fishermen. During the cold months, fishermen dive to the hiding places of the fish and in a very ingenious way catch them with their hands. When the presence of a benumbed and inactive fish is felt with the hand, the dorsal spine is held between the first and middle fingers while the thumb and the other fingers are pushed behind and below the pectoral spines on the two sides. In this way the fish is held fast without any likelihood of its using the spines for offense or defense. This method of catching *Khagga* fish by hand is commercially employed, as at this season they cannot generally be netted from the river, but are sold in streets by hawkers in considerable quantities. These observations were made as early as 1917–19, when, as a student, I was engaged in the study of the fishes of Lahore.

Manipur Valley, Assam. In the course of my fish and fishery survey in the Manipur Valley, Assam, in 1920, I learned that the hill-stream fishes of the genus *Glyptothorax* Blyth were locally called *Nga-pang*, "innocent fish." As an explanation of the name (*Rec. Ind. Mus.*, 1921, 22, 173) I was informed that the fish does not dart away when touched with the hand in a rapid current but instead remains more firmly fixed to the rock and is thereby easily caught with the hands. The fishes of this genus, as the name implies, are provided with a thoracic adhesive apparatus consisting of longitudinal ridges and grooves which converge anteriorly. In its natural habitat, any kind of disturbance implies a stronger current, so the reaction of the fish must be to stick faster to rocks to prevent itself from being swept away by the current.

Bengal, Bihar and Orissa. Catching fishes with the hands is a common sight all along the roads and railway tracks in Bengal, Bihar, and Orissa, when the shallow borrow pits begin to dry in February and March. Boys and girls move about in the mud feeling for the fishes with their hands and feet, and usually catch some. Those that may be left behind are dug up when the surface becomes firm. The fishes that burrow are those that are capable of using atmospheric air direct for respiration. If these drying-up pools are not combed out with the hands in the way indicated, the birds carry away the fishes that may be left on the beds of dried-up pools, and sometimes deposit them on trees. From such instances have originated the stories of fishes' climbing trees, particularly regarding *Anabas*, the so-called tree-climbing perch of the Orient.

It seems probable that catching fishes with the hands may have started with the drying up of pools in the tropics, where fishes could be seen wriggling about in the mud and thereby could be readily captured with the hands. Of course, when fishes sometimes come down with rains, then the means employed to catch them are the hands, and this phenomenon is not very rare so far as India is concerned (*vide* Hora, S. L. *J. roy. Asiatic Soc. Bengal*, 1933, 29, 95).

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Relation Between Time of Treatment and Sprouting of Poisoned Trees

The burning of woods and past logging practices (harvesting the best trees and leaving the worst) have enabled hardwood species of little or no commercial value to dominate millions of acres of forest, range, and pasture land in the South and elsewhere. One of several successful control measures for such trees has been developed by F. A. Peevy and R. S. Campbell, working with blackjack oak, *Quercus marilandica*, in central Louisiana (*J. Forestry*, 1949, 47, 443). Their recommendations are to cut off small trees close to the ground and to apply one tablespoonful of ammonium sulfamate crystals immediately to the freshly cut stump. On trees larger than about 4 in in diam, notches are cut 6 in. apart around the base of the trunk, and one tablespoonful of chemical is placed in each notch.

In testing these methods on hardwood species in the Ozark Mountains of north Arkansas, a trial was made to see if tree mortality and resprouting were affected by the time of day at which the poison was applied. The test was made on common persimmon, *Diospyros virginiana*, a species hard to kill without resprouting. The poison was applied at 6 a.m., 4 p.m., and 8 p.m.; about 50 saplings 1–4 in. in diam (measuring 4½ ft above ground) were treated each time. A small notch was cut in each stem near the ground and filled immediately with ammonium sulfamate crystals. Treatments were applied in August 1948.

Examination, late in July 1949, showed that the crowns of all the trees had been killed and that only a few trees of the entire lot had developed basal sprouts. The most striking results, however, were the differences in epicormic branching (stem sprouting) between trees treated at different times of day. Stem sprouts were found on only 25% of the saplings treated at 6 a.m., on 55% of those treated at 4 p.m., and on 67% of those treated at 8 p.m. These preliminary tests will be followed by additional experiments on other species and at different seasons.

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