A FACTOR IN THE PROBLEM OF BIOLOGICAL PUBLICATIONS

DR. MAYNARD M. METCALF offers us in SCIENCE for March 8 some considerations on the problem of biological publication in America. Speaking for the entomological editors, as one of them, but only with a self-granted commission, I may say that the real drawback to extensive and expensive publication is the absence of adequate funds. I know of only one entomological society that has a fund for publications, the annual income of which may be between $500 and $600. At current rates, this allows for but 200 pages of matter per year; the rest of the funds must come from subscriptions. But entomological journals are many, and subscribers are few. This society may have an income from subscriptions of perhaps $700 more, which gives an additional 225 pages or so, with a *few* illustrations. Such a publication can not devote any one of its numbers to a one-hundred page monograph with twenty plates—this would cost them at least $500, nearly half of their total income.

The Brooklyn Entomological Society supports two publications, the *Bulletin* and *Entomologica Americana,* the former devoted to the shorter papers and the latter to monographs of one kind or another. The *Bulletin* deficit is reduced; but our income from subscriptions to *Entomologica Americana* is barely enough to publish 125 pages a year, with a few plates; but we do manage to publish about 240, without limiting our authors as to the number of plates or figures. We would like to grow bigger; and afford room for the monographs and adequate articles on various phases of entomology, but the support we receive limits us in our activities to a great degree. We have had to turn down meritorious work, because too extensive for our allotment of funds.

And that is the crux of the whole matter. These publications are unprofitable; they are run by societies at an actual loss; and, without the proper support, they are inhibited from growth.

It is too true that the fragmentary and preliminary discussions we publish are susceptible to later change and, naturally, are by no means final. But the remedy is in the hands of those interested. It may be urged that there are too many entomological journals. It is possible. But we must remember that entomology is a most extensive and active branch of biology; and the journals are far too few in comparison to the amount of first-class work that is being turned out. This lack naturally retards notably the progress of the science.

And further, there seems to be money from foundations of all kinds to finance almost anything but biological publications. An adequately financed publication in vertebrate zoology, for example, could readily publish many extensive papers suitably illustrated, which would discuss with finality matters in controversy. And this is peculiarly true of entomology. So small a sum as $10,000 per annum would make possible the publication of a number of definitive monographs on obscure groups by authoritative workers in these groups. Meantime, they see the labor of years lying fallow, and their real contributions to science perhaps lost. Their energy and their intellectual labor are made sterile by this lack of adequate funds.

The saddest thing about being an entomological editor is the necessity imposed upon one by cruel circumstance to reject all this meritorious work, because too extensive for the meager pocketbook.

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THE ALLEGED SCARCITY OF RESEARCH MEN

IN the review of the fifth New York meeting of the American Association for the Advancement of Science which recently appeared in SCIENCE[1] reference is made to a discussion of the difficulty of obtaining competent men for the direction of research work. I wonder if the men who took part in that discussion, and others who have voiced similar complaints, recognize and appreciate the fact that there are, in this country, many retired professional men, who have acquired a competence that renders them indifferent to salary considerations, and whose executive and administrative ability has been fully demonstrated by the success they have attained in their chosen fields of activity; and that some of these men would be very glad to become associated with research bureaus or institutions, if they were given the opportunity to carry on lines of investigation which are related to the work in which they have been engaged. Many of these men received special training in research, in their earlier years; but even if they did not, no one of experience can honestly contend that long-continued daily contact with the problems of engineering, for example, does not fully qualify men of ability either themselves to engage in what we are pleased to designate as "scientific inquiry," or intelligently to direct others in such work.

Is any effort being made to induce these retired professional men to accept positions in the various laboratories which have been, or are now being, established for the purpose of systematic research; or is

[1] February 1, 1929. pp. 107 to 131.

there any real attempt being made to even encourage them to consider such an association? As far as my professional observation goes the answer is *no*. On the contrary, suggestions, and in some cases offers, by such men to devote a whole or a part of their time to this work have been met with either a flat refusal or a veiled intimation that they had outlived their usefulness. And this in view of the well-recognized fact that many of the most notable discoveries and developments in the history of science have been made by men well past sixty.

What is the explanation of this attitude? Is it because younger men fear "the wisdom which lingers after knowledge comes"? Is it because the present directors of research laboratories or the presidents of our universities realize that men who have practical knowledge of the industrial arts and of the real problems which confront our manufacturers and business men might "nip in the bud" many of the silly and useless—or at least ill-advised—"investigations" which are now being carried on by various members of their staff? Is it because of the snobbish view—not always openly expressed, but very often existent—that no one who has not received a doctor's degree, and preferably from some *foreign* institution—is eligible to a seat with the "intellectuals"? Or is it because the scramble for reputations is more controlling than the search for truth?

Whatever the reason may be, let us, at least, have an end to these senseless complaints as to the scarcity of properly trained men "in whom the love of the work is greater than the desire for wealth and power" until some proper effort has been made to avail ourselves of the services of those who are able and anxious to round out a career of financial success and usefulness in the world by devoting the closing years of their lives to research.

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CREPIS REUTERIANA AND ITS CHROMOSOMES

AN earlier note in this journal[1] called attention to the unfortunate confusion which had arisen concerning the identity and chromosome number of *Crepis reuteriana* Boiss. This species has now been obtained in living condition from three different localities in the Mediterranean region, and the chromosomes of two of these accessions have been examined and found to be closely similar. The number is n = 4, and the chromosomes are much larger than those of *C. capillaris*. Unlike *C. capillaris*, this species is a perennial. It is much more closely related to *C. pulchra* and *C. palaestina* than to other annual species.

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THRIPS AS CARRIERS OF FIG-DECAYING ORGANISMS

DURING the past decade the fig growers of California have suffered rapidly increasing losses due to various rots, decays and fermentations of their product, caused by cryptogamic organisms carried into the cavities of the figs by various insects. Caldis[1] shows that *Fusarium moniliforme fici* Cald., which causes a rot (endosepsis) of caprified figs, is transmitted from the wild to the edible fig by the caprifying insect *Blastophaga psenes* L. Phillips; Smith and Smith[2] list a number of insects which feed upon or enter the maturing fruit of all varieties of figs. *Carpophilus hemipterus* L. and *Drosophila ampelophila* Loew. are by these authors and other investigators considered to be the main carriers of the organisms causing two of the principal fig diseases, smut (*Aspergillus niger* Van T.), and souring, under which name is included all kinds of rots and fermentations exclusive of smut and endosepsis. *Notoxus constrictus* Cas., *Blapstinus fuliginosus* Cas., *Cnemeplatis sericea* Horn, and a mite, *Eriophyes fici* Ew., are considered unimportant as disease carriers by the authors. It has been the general consensus of opinion that where caprification is not practiced no insects enter the figs while they are green and hard. In May, 1928, the writer collected several thousand uncaprified, hard, green figs of four varieties: Calimyrna, Adriatic, Kadota and Mission, from various parts of California. These figs were cut into halves and examined with a hand lens for evidence of insect invasion, mutilated and discolored floral parts, insect excreta or the insects themselves. Slightly in excess of 20 per cent. of the figs examined were found to be infested with thrips, specimens of which were identified by Mr. Dudley Moulton, of San Francisco, as *Thrips tabaci* Lind. and *Frankliniella sp.*, probably *F. californica* Moul. The interior of two hundred of the figs showing evidence of insect invasion, and ten showing no such evidence, were cultured individually on nutrient media to determine their cryptogamic flora. Each of the two hundred thrips-infested figs yielded one or more of the following organisms: various species of Bacteria, *Rhizopus spp.*, *Aspergillus spp.*, *Penicillium spp.*, *Fusarium spp.*, *Verticillium spp.*, *Spicaria sp.*, *Hormodendrum spp.*, and a number of yeasts. The ten figs showing no evidence of insect invasion yielded

[1] E. B. Babcock, "Species of Crepis," SCIENCE, 70: 175–6, no. 1547.

[1] *Hilgardia*, 2: 287–324, 1927.

[2] Cal. Agr. Exp. Sta. Bull., 387: 1–38, 1925.