climax, the *piceetum*. In other words, it is true *aceretum* if the climax elements are still dominant, in number of species and in abundance of individuals. This seems to be the case for the Gaspé stands of deciduous forest.

Second is vitality. Do these aforementioned elements tend to complete their cycle and development? With as great relative success as in the optimal area? Again this is so in the Gaspé *aceretum*.

A third factor, of more delicate interpretation, owing to the lack of available data, is the possible position of climax associations as pre-climax or post-climax outside their optimum range, as suggested by Cain[11] and Potzger and Friesner[12] in relation to *quercetum* and *aceretum* in Indiana. It is not unlikely that in Quebec stands of "lake forest," for instance, on the sandy soils at the mouth of the Richelieu, are pre-climax to the maple grove or possibly even sub-climax. It may be that deciduous forest in Gaspé is pre-climax to the more generalized spruce-fir (*piceetum*). The southernmost islands of taiga mentioned above might also be considered as post-climax, since they are—under a scarcely modified form—sub-climax farther south, in the hydrosere.

Surely the southern edge of the laurentian shield presents a fairly complex vegetational pattern. It has most often been considered an "ecotone." However, to one who is familiar with that pattern, it appears much more as a mosaic of associations than of species. What is meant here is that, for instance, the deciduous forest and the Canadian forest on their points of contact may interfinger over fairly large areas, but in any given stand, each community remains distinct: the species themselves do not ordinarily mingle. That is also true, although to a lesser degree, of the later seral stages. For instance, white pine and hemlock seldom if ever occur on the climax site of spruce-fir forest, as they are subclimax to the deciduous forest.

In any case, it seems doubtful here if the designations pre-climax and post-climax will serve any useful purpose if two climaxes interpenetrate over an area several hundred miles wide. It may be better to recognize the permanence of two separate climaxes over a varied topography that allows, however, of no physiographic evolution rapid enough to overcome climatic change itself.

PIERRE DANSEREAU

SERVICE DE BIOGÉOGRAPHIE,
UNIVERSITÉ DE MONTRÉAL

THE GENERIC NAME OF THE SAND FLY

IN his statement published in SCIENCE for April 28, 1944, your correspondent, W. F. Rapp, Jr., has completely overlooked the reason for the emended spelling, *Phlebotomus,* commonly applied to the sand flies, otherwise known as *Flebotomus*. All codes of nomenclature provide, of course, that the spelling of every generic name be that used by the author in his original publication where the name was first proposed. Specific exception is made, however, where it is evident that the original spelling includes a typographical error and permission is given to correct such mistakes in later publications.

Rondani used *Flebotomus* in designating the genus in 1840, but the derivation of the name is so obvious (from φλερός, vein and τομή, cutting) that Agassiz and most later zoologists have emended the spelling to *Phlebotomus,* using the corrected Latinized form. Thus, the change has been made to correct a very evident typographical error, and not for reasons unknown, nor "to make it easier to pronounce," as suggested by Dr. Rapp. A further reason to invoke the provision of the code concerning the correction of typographical errors lies in the common and long-standing use of the combining form *phlebo-* in a series of common medical terms referring to veins, blood, blood-letting, etc. Also the term phlebotomic or its close counterpart is regularly applied to the blood-sucking insects in English and in the other more widely used European languages.

CHARLES T. BRUES

BIOLOGICAL LABORATORIES,
HARVARD UNIVERSITY

ISOLATION OF ERGOSTEROL FROM PENICILLIUM NOTATUM

DURING the course of the determination of the hydrocarbon content of plants as part of work on the origin of petroleum,[1] we have studied *Penicillium notatum,* grown for the production of penicillin. The non-saponifiable matter from a butanol extract of the wet mycelium produced an easily purified sterol which has the distinctive properties of ergosterol; m.p. 160–162°, $[\alpha]^{25}_{D}$ −126[2a]. Acetate, m.p. 171–174°, $[\alpha]^{25}_{D}$ −90[2b]. Benzoate, m.p. 165–167°, $[\alpha]^{25}_{D}$ −64[2c]. The amount of ergosterol isolated approximated 1 per cent. of the dry weight of the mycelium, although maximum recovery was not attempted. Ergosterol has been isolated from yeast, ergot and a variety of fungi. It will be recalled that the irradiation of ergosterol yields vitamin D_2, calciferol.

We wish to thank the Department of Bacteriology of the School of Agriculture and the War Production Board Penicillin Project for the material studied.

[11] S. A. Cain, *Am. Midl. Nat.*, 21: 146–181, 1939.
[12] Potzger and Friesner, *l.c.*

[1] American Petroleum Institute Research Project 43b.
[2] (a) Purified hydrated ergosterol melts at 160–163°, $[\alpha]^{20}_{D}$ −128.7, Callow, *Biochem. Jour.*, 25: 79, 1931. (b) Acetate, m.p. 179–180°, $[\alpha]^{25}_{D}$ −90, Bills and Honeywell, *Jour. Biol. Chem.*, 80: 15, 1928. (c) Benzoate, m.p. 168–170°, $[\alpha]^{23}_{D}$ −70.5, Wieland and Asano, *Ann.*, 473: 300, 1929.

Our thanks are due to our former colleague, Russell E. Marker, now in Mexico, for the methods used.

H. D. ZOOK
T. S. OAKWOOD
F. C. WHITMORE

SCHOOL OF CHEMISTRY AND PHYSICS,
THE PENNSYLVANIA STATE COLLEGE

UNUSUAL MORTALITY AMONG GEOLOGISTS

DURING the slightly over five months ending April 19 no less than sixteen fellows of the Geological Society of America have died. Only twice in the entire fifty years of the society's history has the entire annual loss of its personnel been as heavy as in this five-month period. Never has the distinction of the deceased fellows been so outstanding. The list follows:

	Date of death		Age
	1943		
Frank Leverett	November	15	84
H. L. Fairchild	"	29	94
	1944		
G. O. Smith	January	10	73
E. B. Mathews	February	4	74
Arthur Keith	"	7	79
F. G. Clapp	"	18	65
E. O. Ulrich	"	22	86
Douglas Johnson	"	24	66
R. E. Dickerson	"	24	66
J. A. Taff	March	8	81
H. A. Buehler	"	14	68
B. L. Miller	"	23	69
H. L. Smyth	April	3	81
H. N. Eaton	"	12	64
F. C. Schrader	"	16	83
R. C. Wells	"	19	66
	Average		74.5

This list includes our foremost glacial geologist (Leverett); three former presidents of the Geological Society of America (Fairchild, Keith and Johnson); a former director of the U. S. Geological Survey (Smith); a Penrose Medallist (Ulrich); four members of the National Academy of Sciences (Leverett, Keith, Ulrich and Johnson) and two of the American Philosophical Society (Leverett and Johnson).

Three other geologists not fellows of the society died within the same period. They were George Steiger, who died on April 18 at the age of 74, R. C. Wells, who died on April 19 at the age of 66, and F. B. Hanley, who died on April 24 at the age of 45.

Can these losses, notwithstanding the ripe age of the men, be regarded as war casualties? Some we know have been called back into strenuous active service, and all have probably suffered disillusionment by reason of the world catastrophe with its destruction of cultural institutions and values, to which their lives have been devoted. Few have been without close friends or relatives in supreme danger on the fighting fronts.

WM. H. HOBBS

THE PAPER SHORTAGE AND SCIENTIFIC PUBLICATION

WARTIME limitations of paper are making serious difficulties for our scientific periodicals, and the paper shortage is more likely to increase than to diminish.

Three adjustments are possible: (1) Scientific journals might be officially recognized as of greater value than, say, newspapers, and so obtain higher priorities; (2) there could be a drastic curtailment of publication; (3) better printing, editing and other means could secure publication of substantially the present material in less space.

Doubtless scientific publications are more valuable than much of the stuff that is printed in the popular newspapers and magazines. But it is altogether unlikely that scientific journals could compete with popular magazines in bringing pressure on allocating authorities.

Drastic curtailment in the publication of scientific results would be a calamity to the nation. As a matter of fact, the paper shortage merely brings to a head a crisis in scientific publication which has been long developing, and it is high time that it be given careful consideration. The effectiveness of scientific investigation is menaced by increasing difficulty and delay in publication. Prior to this present squeeze in paper the chief difficulty has been due to rising costs which compelled restriction of output with consequent congestion until papers often become almost obsolete before publication. Nothing is more important to the advance of science than the prompt interchange of results. This has been accomplished by printing, but present conditions have fostered other and quicker modes of diffusion. These should be stepped up in frequency and in effectiveness.

The easiest method for prompt dissemination of results is by the exchange of manuscripts within the small circle of workers known to be actively concerned. This gives insiders a great advantage. During the war when much is secret, outsiders have little chance of making useful contributions. No one doubts the necessity for secrecy in war research, but science advances mostly through the stimulation of mind on mind. The chief function of technical societies is to keep their members abreast of progress, and desire to keep up with developments is the principal motive for maintaining membership. In elementary self-interest, therefore, a technical society ought to be alert for every means of increasing its usefulness to its members.

Some societies distribute advance abstracts of the papers offered at their annual meetings. Not infrequently these appear more than a year before the papers themselves are printed. Authors and program makers should take great pains to improve abstracts.