

consist of haploid mycelium only. They grow and undergo the first differentiation into an outer half of large, rounded empty cells and an inner half of small, dense living cells. Ordinarily no spores are produced, and after further expansion the whole structure dies.

After pycniospores of different infections have been mixed, a study of the pycnia reveals the presence of binucleate cells in the upper part of the wall of the pycnium near the base of the paraphyses. Leading downwards from this area are hyphae whose cells contain either two or three nuclei, and sometimes more. Binucleate cells can be found also at the base of the pycnium. In the area between the pycnium and a young aecium, there is a mixture of many haploid and a few diploid hyphae.

The aecium begins as a loose tangle of hyphae, predominantly uninucleate, but usually including a few binucleate cells. In later stages binucleate cells are regularly present, scattered here and there in the haploid mass. As the time of aeciospore formation approaches, the centrally located diploid cells enlarge, often becoming multinucleate as they look outwards towards the lower surface of the leaf. These become the basal cells of the spore chains, which, when fully organized, consist of regularly binucleate cells. In older infections where successive aecia are forming, diploid hyphae can be found between the older and the younger aecia. As soon as aeciospore formation begins, the formation of pycniospores is checked and the pycnial exudate dries.

A more detailed study is in progress.

RUTH F. ALLEN

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE,
COOPERATING WITH THE
COLLEGE OF AGRICULTURE,
BERKELEY, CALIFORNIA

A USE OF JOURNALS BY RESEARCH MEN.

A PORTION of the article by Dr. B. R. Andrews on "Budget Needs of College Teachers," in *SCIENCE*, No. 1802, page 20, recalls a method which contributes to the more efficient use of journals by research men. The writer has seen this system used in two different institutions with very satisfactory results, and its general adoption might be a temporary means of somewhat relieving the situation described by Andrews.

The method mentioned attempts to bring to each research man (and teacher) all the journals in which he is interested very soon after they reach the institutional library, and give him opportunity to read the articles of most immediate interest and list others for early reading.

Each man, including graduate students, in a college or in a department, if large, lists the journals

which he wishes to read in the order of his preference for them. These lists are compiled by a member of the library staff or by the secretary of the department. A library helper visits the desks of all men wishing any of the journals at regular intervals, perhaps twice a week. As each journal is received by the library, it is taken by the helper on his next trip to the desk of the man most interested. As the helper makes the regular rounds, he collects all the journals which were distributed on his previous visit, and redistributes them, leaving each journal on the desk of the man whose name is next on the list for that particular journal. It takes a helper four to five hours a week to distribute the journals, from two or three to fifteen per man, to thirty-five men twice a week.

The fact that a research man has the journals in which he is most interested, or as many of them as are taken by the institutional library, coming to his desk and remaining for a limited time is an opportunity and a stimulus to keep abreast of the developments in his particular field.

J. L. ST. JOHN

STATE COLLEGE OF WASHINGTON

FUNCTIONS OF REVIEW JOURNALS

THERE has recently come to hand from an enterprising German publishing house a prospectus of various medical review journals or "Referatenblätter" (Zentralblätter, Zeitschriften, Berichte, Jahresberichte). These journals are excellent for the purposes for which they were originally intended—several *Berichte* I should not like to do without. They enable one to read more discriminately; but that they might be considered short-cuts or "royal roads to learning" had not occurred to me. Hence my surprise on reading on page 4 of the prospectus referred to the following paragraph:

... Die Zentralblätter sollen den Bezug der ausländischen Litteratur, wenigstens für die deutschen Leser, überflüssig machen, und es wird besonders darauf gesehen werden, dass die *wichtigen* ausländischen Arbeiten so ausführlich referiert werden, dass ein Einblick in das Original im allgemeinen entbehrlich erscheint.

One wonders whether biological literature is not thus behaving like the legendary dragon-fly that swallowed itself, beginning at the abdomen. Can one afford to ignore the basic journals, including the German ones, or shall we discount the statement of the prospectus as an overenthusiastic expression of nationalism? To my notion there is no danger to the substantial biological literature, for after all a review is a review, a *Referat* a *Referat*. One can not afford to get one's information second hand in any field of research; hence the value of review journals will always be limited.