certain limitations, yet when considered together on a rating sheet the combined weighted average is as accurate as can be achieved by statistical methods of evaluation, and it is vastly superior to the result obtained by the common method of marking a long ballot upon the basis of personal acquaintance or of solicitation.

The author has compiled lists of selected chemists for his personal use from the decennial author indexes of *Chemical Abstracts*. If for this ten-year period a chemist shows a productivity, as author or coauthor, of over 20 papers, his name is added to a preliminary list to which other criteria are then applied. A preliminary list thus compiled includes deserving names that are not included on the list of chemists submitted by the editor of the new Directory of American Men of Science. It is open to the objection that an index of papers includes many items of trivial scientific importance, but it has its use as a rough rapid sorting-out method which can be combined with the results of other criteria, according to the purpose of the compilation.

Because of the frequency with which the Directory of American Men of Science is consulted and of the high regard in which it is held, it is most desirable that its method of "starring," in order to avoid the injustice of overlooking worthy candidates, be based upon impersonal methods of the highest attainable accuracy.

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CLAVACIN AND THE PRESS

RECENTLY a press article appeared in many newspapers concerning the work done in this laboratory on clavacin, an antibiotic substance obtained by *Aspergillus clavatus*. The release given to the local press was so worded as to emphasize the fact that this material was being tested against *plant pathogenic bacteria*, and full credit was given Dr. S. A. Waksman, of the New Jersey Agricultural Experiment Station, and his associates for their discovery and pioneer work on clavacin. It was compared with penicillin, and the statement was made that clavacin was more bactericidal for *some species of bacteria* than was penicillin. Due to the wide publicity given penicillin, this statement attracted the attention of the outside press, and unfortunately resulted in decidedly misleading statements regarding the possibility of clavacin as a powerful new remedy for human diseases. Furthermore, some of the abbreviated articles made no mention of the previous work of Dr. Waksman and his associates.

The work done in this laboratory has been concerned primarily with the testing of clavacin-containing filtrates on bacterial plant pathogens. This research was undertaken as a result of the publication by Waksman, Horning and Spencer (SCIENCE, 96: 202–203, 1942) indicating that *Aspergillus clavatus* produced a bactericidal substance which was effective against both gram-positive and gram-negative organisms and, furthermore, its action was bactericidal as well as bacteriostatic. Since most species of bacteria causing plant diseases are gram-negative we reasoned that clavacin might be more useful in the control of plant pathogens than any of the many other mycogenous bactericides which had been described.

Dr. Waksman kindly furnished me a strain of *Aspergillus clavatus* which he had found to be very active in the production of the bactericidal substance. Using the media and the technic he suggested, we were able to obtain a material which gave similar results to those obtained by Dr. Waksman when tested against *Staphylococcus aureus*, the test organism used by most investigators. Using the unconcentrated, sterile filtrate, a series of tests were run against over twenty species of phytopathogenic bacteria. The detailed results and methods used will be published in full at a later date. In general, bacteriostatic action was observed in all cases at fairly low concentrations, while bactericidal action varied greatly. A comparison of *Staphylococcus aureus* with *Phytomonas pruni* indicated that the latter could be used as a standard organism for plant pathogens, since the lethal dose was about the same for these two organisms.

Comparisons of penicillin and clavacin were made on some of the plant pathogens, in each case using the unconcentrated filtrate from *Penicillium notatum* and *Aspergillus clavatus*. The *Penicillium notatum* culture was one known to produce a high yield of penicillin and the filtrate was standardized with *Staphylococcus aureus* as the test organism. The *Penicillium notatum* filtrate failed to show any decided bactericidal action against a number of the phytopathogenic species, whereas the Aspergillus filtrate showed its usual potency.

It is to be regretted that this comparison of clavacin and penicillin, when reported in the press, resulted in a flood of letters from people suffering from all kinds of diseases, whose hopes had been raised by the results obtained from penicillin and the wide publicity given this new "miracle drug." Dr. Waksman has stated that clavacin is quite toxic to animals and, certainly in its present form, is not likely to be a rival of penicillin or the sulfa drugs. It should be recalled, however, that penicillin was reported as "toxic" when injected into animal tissues before it was highly purified.

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