

ments on the basis of an inadequate observation of facts. Speaking of American educational institutions, he says:

In the state universities I found the professors ready to give their opinions freely on evolution, but in theological schools many of them were afraid to speak except with extreme caution.

The United States is the only country in the world where the attempt is being made to split up science into sects. Apparently there is Methodist biology, Baptist biology, Catholic biology—a biology for every denomination. If a professor in a Methodist college teaches Baptist biology or just plain biology, he is dismissed.

These statements impress me as being very inaccurate and misleading. There is no doubt that in a very considerable proportion of the theological seminaries of this country the doctrine of evolution is held and taught as one of the great basic laws of the universe. There is a large number of "denominational colleges" in the country, including such institutions as Amherst, Bowdoin, Dartmouth, Wesleyan, Oberlin, De Pauw, Beloit, Knox, Lawrence, Grinnell, Carleton and Pomona, where the doctrine of evolution is taught in just as scientific a manner and with as great freedom as it is in the state universities.

It is true that there is a scientific biology and a "Bryanese biology," between which there is a struggle at the present time. But this is not a denominational conflict. There are colleges in the country in which the teaching of scientific biology is not permitted. But they can not be considered as representative American colleges, and they are not restricted to any one or two or three denominations.

As a matter of fact, it seems that the attack of Mr. Bryan, Mr. Norris and other leaders in the Fundamental movement, is directed more against the state universities than against the denominational colleges, and it is an open question whether the biologists in standard representative colleges do not have greater academic freedom than is enjoyed in a number of our state universities. The Fundamentalists have launched a well-organized campaign to prohibit by law the teaching of scientific biology in state universities and other tax-supported institutions. This campaign is being prosecuted with greatest vigor in the southern and southwestern states and there is a strong propaganda of the same sort in several midwestern states. When the Ku Klux Klan shall have accomplished their present objectives of disfranchising the Catholics, suppressing the Jews and Negroes and restoring the Bible to the public schools, they may logically be expected to "come over into Macedonia" and aid the Fundamentalists in their fight on scientific biology.

While biologists are not divided as to the fact of

evolution, there are two or perhaps three schools of thought among them in regard to the definition of life, viz., the mechanists, the vitalists, and the ignoramuses, sometimes called "agnostics." But here again the line of cleavage is not between the denominational colleges and the universities. There is a considerable number of eminent biologists, connected with some of our most distinguished universities, who do not find in physics and chemistry an adequate explanation of life—that "unknown god whom we ignorantly worship."

R. C. MULLENIX

LAWRENCE COLLEGE,
APPLETON, WISCONSIN

PERAMBULATING MILLIPEDS

I WAS inclined to doubt the identification of the myriapods referred to in "A note on migration of myriapodia," which appeared in *SCIENCE*, July 25, 1924, but O. F. Cook's note on the "Swarming of desert millipeds" (*SCIENCE*, September 26, 1924), clarifies the matter to my satisfaction.

My own observations on Louisiana myriapods may be of some interest in this connection. Centipedes, of course, of which we have several genera and species in Louisiana, are predaceous nocturnal creatures, and being cannibalistic when occasion permits are not inclined to gregarious habits. I have never seen them abroad in the daytime except when their haunts are disturbed, when they scurry individually to places of safety.

This is not so in the case of our millipeds, which may be seen abroad both day and night on suitable occasions, although all species seem to shun direct sunlight, and may remain hidden both day and night during hot, dry weather. Those individuals or species living in well-shaded woodlands can be most constantly encountered during the daytime. Day or night, however, all Louisiana species exhibit perambulatory habits after a rain and to a lesser extent during foggy weather.

The most conspicuous swarming I have observed in this state was in the case of *Actobolus* (*Spirobolus*) *marginatus*, a notably gregarious species normally inhabiting damp woods, where it feeds largely on decaying wood. About twenty years ago a section of cut-over cypress swampland lying between New Orleans and Lake Ponchartrain was reclaimed in order to develop the suburb now known as Lakeview. This millipede became abnormally abundant in that section about fifteen years ago and remained so for several years because of the decaying of the cypress stumps upon exposure to the weather after drainage. Every damp night during the late summer and after every rain, they could be seen crossing the roads in count-

less numbers, all uniformly sized adults, the majority traveling in a direction away from the center of greatest abundance, though not necessarily north. Because of these migrations, they soon populated newly reclaimed areas as fast as conditions became suitable.

In alluvial lands, it is easy to explain the value of the migratory habit to the species. Normally inhabiting the damp woodlands of low elevation immediately bordering the cypress swamps, the locality most suitable to them varies with periods of rainfall, floods and drouth. After they have taken to the swamp during a dry period, a rapid unidirectional migration is their only salvation from a sudden rise of the water level. The instinct to flee to higher ground after a rain urges them on even in permanently drained land.

I might hazard the following in explanation of the northerly course of the New Mexico species. Driven from their haunts in the burrows of desert rodents by excessive moisture from a passing storm, upon emerging at the surface of the ground they were unable to face the noonday sun and naturally looked to the northern sky for relief.

PERCY VIOSCA, JR.

RESEARCH DEPARTMENT,
SOUTHERN BIOLOGICAL SUPPLY Co., INC.,
NEW ORLEANS, LOUISIANA

SCIENTIFIC BOOKS

The Intellectual Worker and His Work. By WILLIAM MACDONALD. The Macmillan Co., 1924, pp. 351.

THE thesis of this book is that intellectual work will never be developed and supported as it should by the public until the intellectual workers exert themselves through cooperative organization to secure the recognition which is justified by their service to society. It is assuredly anomalous, as the author suggests, that a gifted class often best fitted by native endowments and special training to assist in the solution of public problems should be practically ignored by legislators and public alike. On the one side has grown up capital, and on the other organized labor, both influential and unafraid. In the twilight zone between stands the intellectual worker, for the most part mute and lacking power even to secure a minimum of protection to himself and his work. This is the more unfortunate because the bringing to bear of intelligence on environment, the special function of the intellectual worker, is responsible for the extraordinary development of our civilization. The very existence and progress of capital and manual labor depend, in final analysis, on the proper support and recognition of the intellectual worker. Without his continuing contribution a retrogression of society,

which would wipe out the profits of capital and the wages of labor, would be immediate and inevitable.

MacDonald points out that the intellectual worker, since he lives from wages and not from profits, is economically aligned much more nearly with labor than with capital. Referring to the generally better pay of the manual laborer as compared with the brain worker, the author notes that the supposititious dignity which is presumed to atone for low salaries of intellectual workers is merely a cloak for wholesale exploitation of the group, with consequent underpayment and inevitably lowered standard of living. The true dignity is that of the manual laborer, who, through organization, has secured something of the recognition which is his due.

Attempted control of the opinions and activities of the intellectual worker, as by governing boards of universities through the immediate agency of the president, comes in for effective and strenuous protest at the hands of the author. The low state of intellectual work in some of the colleges of this country is indicated by the fact that active participation in politics may bring official rebuke, and often the only opinions on politics, religion or morals it is safe for a professor to express are those which accord with those of the corporation and the president. Support of a minority or third party still exposes a professor to discrimination and possible removal, and the holding of opinions officially branded as revolutionary is likely to put the teacher's tenure in jeopardy. Here is a situation, which, if continued, threatens democratic government. Progress everywhere has come as the result of some heresy. It is true enough that a certain amount of restraint is frequently necessary to promote harmonious and orderly civilized existence, but, as MacDonald naïvely remarks, the intellectual worker has the same right as the machinist, the bookkeeper or the unskilled laborer to the control of his leisure hours, to his opinions and their expression, and to the legal and political privileges which society accords in general to all its citizens. Highly illuminating is the author's reference to attempted governmental control of political opinions of professors in France, where, as he explains, an attempt to coerce the members of university faculties met with an unexpected check. In July, 1922, the dean of the Faculty of Letters at Paris, M. Ferdinand Brunot, who had publicly opposed a pending government proposal for the reform of secondary education which had aroused widespread discussion in intellectual circles, was called to account by the minister of public instruction. Professor Brunot at once replied:

I have the right and duty to discuss these questions publicly where I please, as I please, and as much as I