

by the steady inflow of specimens, besides important data on the local status of ruffed grouse over a wide area.

For the present, fresh New England material in the form of diseased birds, which may be picked up, or healthy birds, which are shot or found accidentally killed, should be sent to Dr. A. O. Gross, Bowdoin College, Brunswick, Maine. Material from other states should be sent to Dr. A. A. Allen, of Cornell University, Ithaca, New York. Collections of crops and viscera carefully labelled and preserved in 10 per cent. formaldehyde are always valuable, as intensive studies of food habits in different parts of the country are well worth making. Contributions are greatly needed and should be sent either to the Grouse Committee of the American Game Protective Association, Woolworth Building, New York City, or to the New England Grouse Fund, Massachusetts Fish and Game Protective Association, 3 Joy Street, Boston.

J. C. PHILLIPS, *Chairman*

*Committee on the Ruffed Grouse*  
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### GONIONEMUS

FOR many years investigators at Woods Hole have hoped to see the missing stages in the life history of *Gonionemus* filled in. Dr. L. Murbach and the writer spent many seasons at Woods Hole in an effort to solve the riddle. I have visited the famous Eel Pond at every season of the year, and have been unable to find a single polyp in the early spring. Late in April or early in May great numbers of tiny medusae appeared, but I was quite unable to discover their source or to rear the larvae long enough in laboratory aquaria to get them through their critical period.

In the light of Dr. Joseph's discoveries it is highly interesting to see how close we came to solving the problem on this side of the Atlantic. In one of my early papers on the "Life History of *Gonionemus*"<sup>1</sup> I figured polyps which I had reared from eggs on microscopic slides, in which there seemed to be a sort of basal budding going on. Only a few such individuals were seen, and they were looked upon as abnormal or as indicating a peculiar method of asexual multiplication.

At the other end of the hiatus in addition to the multitudes of little medusae with twelve tentacles in three different sizes according to age, a single medusa has been reported which was probably *Gonionemus*, and which appeared in a salt water aquarium. I was summoned in the middle of the winter by Professor

George H. Hudson, of the Plattsburg Normal School, to examine a tiny medusa which had appeared in his laboratory aquarium. I think I am right in my recollection that the water in this aquarium had been compounded in the laboratory, such being the common practice of Professor Hudson. By the time I arrived no sign of the medusa could be found, nor did others appear, but Professor Hudson had examined the one specimen carefully and was probably correct in calling it *Gonionemus*.

It now appears that, at least in the European species, and we can scarcely doubt that the same thing is true of *G. murbachii*, the basal buds which appear late in the season on the polyps are medusa buds. Professor Joseph describes the polyp as producing a series of planula-shaped vegetative buds which drop off almost exactly like those of the common pond hydra. Later buds near the base of the individual assume a more compact form and develop directly into the tentacled medusa.

So many students at Woods Hole and at institutions in which *Gonionemus* has been used for laboratory illustration of the coelenterates have been informed in text-books and from the lecture desk that the transformation into the free-swimming medusa was a matter of conjecture only that it may interest a considerable number to know of Professor Joseph's success in closing this annoying gap. It is somewhat of a coincidence also that salt water aquaria furnished him with the first clue of the nature of the metamorphosis. Professor Joseph's articles appear in a series of publications, the last of which was the *Zeitschrift f. wissenschaft. Zoologie*, 125, 1925, p. 374.

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### THE VALUE OF SOCIOLOGY

PERSONAL culture and social efficiency are two very definite objectives in modern education. The study of sociology will help fulfill both of these objectives. Personal culture to-day is not attained by studying topics that do not pertain to modern conditions, but rather by receiving instruction in subjects that have a direct bearing on the conduct and problems of life. No study will necessarily make a person cultured, but since sociology deals with many current problems it will help make the student cultured from the academic viewpoint.

Dr. C. W. Eliot, in his monograph, "Education for Efficiency," after stressing the importance of character and of literary appreciation and expression, says: "The next great element in cultivation . . . is acquaintance with some part of the store of knowledge which humanity in its progress from barbarism has acquired and laid up. . . ." He says further,

<sup>1</sup> Proceedings Acad. Nat. Sci., Philadelphia, November, 1920, Fig. 15.

"Culture can no longer imply a knowledge of everything—not even a little knowledge of everything—it must be content with a general knowledge of some things and a real mastery of some small portion of the human store."

Dr. Eliot then asks this question: "What portion or portions of the infinite human store are most proper to the cultivated man?" and answers it by saying: "Those which enable him, with his individual personal qualities, to deal best and sympathize most with nature and with other human beings. It is here that the passion for service must fuse with the passion for knowledge."

Now does it not seem almost self-evident that the student who has studied the principles and problems of sociology "has a better chance of fusing the passion for knowledge with the passion for doing good"—has a better chance of fusing the passion for culture with the passion for service than the student who has neglected to study sociology?

Good citizens attempt to better society and "he is greatest among his fellows who best serves their truest interests." But how can the citizens of to-morrow work toward their ideals? How can they better society—how can they "improve human relations" *unless* they study to find out what present conditions are? The voters of the future must have social knowledge; they must have knowledge concerning actual conditions; they must study the evils as well as proposed remedies; they must know the problems before they can suggest solutions. The practical use of a course in sociology is by no means small, even if we confine the study to elementary problems and measure the value by the strictest of utilitarian rules.

In a few years our students in school and college become voters and have all the duties of citizenship to discharge, and for this reason they should be required to study sociology which will help prepare them for citizenship. Students in school or college may not make great progress in the study of social problems, but a little knowledge may stimulate them to acquire more, and it will certainly give them a deeper interest in the welfare of their country and the well-being of their fellow-citizens. The study of society, contributing as it does a knowledge of complex activities, interests and forces of modern social life, is a good preparation for citizenship.

Sociology will help make the students socially efficient, for, if taught as it should be, it will give the students a sense of awareness of their civic and moral responsibility and the desire and knowledge so they may cooperate intelligently with their fellows in promoting the common welfare. It should contribute to each student's usefulness as well as to each student's happiness. Discussions of social problems will help

students to get more out of life, not only by contributing to the enjoyment of leisure, but also by creating the desire or willingness to share effectively in making others better and happier. Sociology ought to help any citizen to work better with his fellow-men for "the continuous improvement and happiness of his race, his nation, his state and his own immediate community."

Finally to summarize: the study of sociology has real cultural value and it helps prepare the students for effective citizenship. It promotes culture and has practical worth for life because, as already stated, it has a direct bearing on the conduct and problems of life. There are four important things that the study of sociology will do for the student. It will (1) help him to enjoy life; (2) prepare him for duty; (3) give him a desire to participate intelligently in the world's work, and (4) help him to render genuine social service. And what else can the study of sociology give that can in any way compare with a sincere desire to have even a small share in solving some of the problems of civilization?

In conclusion, the thought should be stressed that emphasis should be placed on preparing for service because "service is the highest criterion of the worth of lives. We are learning that, whether in history or romance, the names that shine with the fairest and brightest light and last longest are those that have done most service. The great moments in great lives are those when the supreme choice is to be made between self and the welfare of others, and the best criterion of supreme manhood and womanhood is when the latter prevails. More and more enlightened public opinion is coming to distinguish between those who live and die for themselves and those who live and die by the gospel of helpfulness."<sup>1</sup>

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### THE DEEPEST HOLE

IN the October 23 issue of *SCIENCE* a correspondent states that the deepest hole ever drilled is the Miley Oil Company's No. 6 well, located at Athens, Los Angeles County, California. I wish to call your attention to the fact that the Peoples Natural Gas Company's well No. 2 on the Booth-Flynn property at McCance, Ligonier township, Westmoreland County, Pennsylvania, was drilled to a depth of 7,756 feet. This is 165 feet deeper than the Miley Oil Company's well and is, I feel quite sure, the deepest hole ever drilled.

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<sup>1</sup> R. A. Mackie, "Education during Adolescence," p. 18, E. P. Dutton & Co., N. Y., 1920.