tive spirit that admittedly exists. Be there other professors who are worried by such a spirit, probably even they are more useful than they would be in the absence of such a spirit.

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6 December 1954

More on "A New University"

The proposal of William Seifriz [*Science* 120, 87 (1954)] for "a new university" that would be "a center . . . from which will emanate a culture that man will respect, an intelligent biological system of ethics," will strike a responsive chord in many who feel that the well-rounded man, scientist no less than nonscientist, is the man best equipped to make the greatest contribution toward a sane, orderly and wholesome society.

I wonder whether it is generally known that there already exists in this country an organization—not on so elaborate a scale as a university, but one nevertheless that is well founded, stable, and rapidly growing—which has as its primary objective the effectuation of substantially the same ideals as those the university proposed by Seifriz would advocate.

I refer to the American Humanist Association, with headquarters at Yellow Springs, Ohio. This is a membership organization, which is open to all interested in its program of promoting Humanism—a way of life, or philosophy, firmly based on the findings of science, imbued with the democratic outlook, and cultivating a rational system of ethics, all combining to forecast a culture truly worthy of the respect of mankind. Some call Humanism a religion—not however in the sense of indicating a belief in a deity, for Humanism finds no reliable evidence of a deity in the cosmos, but rather as indicating a personal commitment to the highest ideals human insight has yet evolved.

Humanism emphasizes the dignity inherent in every human being. It teaches that man, within the limitations of his natural environment, has the capability of solving his problems, not only material, but moral; that, just as man has outgrown a supernatural basis for his interpretation of natural phenomena, so also has he outgrown a supernatural basis for his ethics and must develop his ethical concepts on a naturalistic foundation; and that, because this is the only life it seems likely he will live, he ought to make the best of it for himself and for others.

Whether or not the American Humanist Association will evolve into the university that Seifriz envisions, only time will tell. But it offers here and now an opportunity for all interested to participate in and to advance the general program that such a university would foster.

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13 December 1954.

Hydrolyzed Fish Protein from the Flesh of Waste Fish

During the last few years there has been a fight going on throughout the world against protein malnutrition, which is more serious than vitamin and mineral deficiencies, since protein is essential to the body for its growth, repair, and nutrition and is needed by children and adults alike. The existence of life without protein is not possible. In almost every country today the supply of protein is not adequate, and, as a result, cases of malnutrition are increasing day by day, leading to higher and higher death rates. It is time that attempts were made to correct this deficiency by supplying protein from some untapped resource that is also inexpensive.

Fish is a well-known source of protein, but as yet no attempt has been made to extract cheap protein from the flesh of tons of waste fish that is neither properly utilized nor consumed by human beings. For example, the flesh of sharks and rays is not properly utilized in many places in India because it is not considered palatable. However, we have found that the protein content in these fish is as high as in other edible fish. Our preliminary work has been done on sharks and rays.

The first step in our procedure is to mince thoroughly the flesh of the fish and then to wash it. When this has been done, the fish is boiled from ½ to 1 hr with very dilute acetic acid solution under 80°C until the muscle becomes threadlike when pressed. Then the fish is washed thoroughly to remove the acid and lipids. When the overflow water runs clear, the washing is completed, and the water is pressed out. This substance is completely dried and treated with petroleum ether to eliminate the fat and to increase the keeping quality. This last step is repeated several times.

The resulting complex fat-free protein is insoluble in water and is nondiffusible and difficult to absorb. Therefore, hydrolyzation is necessary to make this protein easily assimilable. Since there is the possibility of destroying some of the amino acid end-products by acid hydrolysis, we used alkali hydrolysis by caustic soda, 10 to 12 percent caustic soda under 80°C. This method is simple to use and is suitable for both laboratory and commercial purposes. When the substance becomes completely liquefied, it is neutralized by commercial acetic acid (85 percent). This neutralized liquid is spray-dried to a flourlike powder that is cream colored and retains its natural flavor. The yield of the finished product is nearly 10 percent of the raw material. The fat-dissolved petroleum ether is distilled to remove pure ether. More than 50 percent can be recovered.

The finished product has an 85-percent protein content, which is much higher than that contained in other foods, both foreign and local. For example, raw or boiled eggs have 11.9-percent protein content; dried eggs, 43.4 percent; cheese, 36.8 percent; roasted chicken, 29.6 percent; frozen raw beef, 20.3 percent;