

have been omitted, for the man in charge made the work so attractive that no student would have wished not to take part.

The two favorite sports were field hockey and Association football. Track events were staged from time to time. Tennis was popular, too. The writer, simply because of his nationality and inclination, not because of any special skill, helped out when baseball was in order. In passing, from the point of view of psychology, it is interesting to note that French boys could derive no fun from playing the outfield since periods with nothing to do but watch the others play were distressing to them. The result usually was that when a play did come their way, they were gazing in any but the proper direction. Calisthenics and gymnastics received much attention. The writer has seen the boys, lightly clad, on their backs in slush going through their exercises in winter—and enjoying the process!

This period of supervised play ended with a swim in the Seine from which all returned for tea at 4:30. Although nothing but tea and bread were served, this little repast was enjoyed by all and indeed was necessary, for dinner was not served until 7:30. From 5:00 to 7:30 there was a study-hall required of all, although some of the older boys had a certain amount of class work during this period.

The dinner at 7:30 was the heaviest meal of the day, yet it was on the whole, frugal. Wine was served but two or three times during the year, upon some special occasion, such as Armistice Day. In winter all except the oldest were in bed by 8:30, assuring long hours of sleep. During most of the year, however, the boys played in the lovely *parc* of the *château* until nine. A custom which will amuse, if not interest, the reader is that of the good night greeting. All of the boys sought out the teachers individually to bid them good night and those who were not older than thirteen exchanged kisses with their taskmasters! The writer tried to evidence no surprise at this custom

which was well established and looked upon as perfectly natural, but in practice he limited his good night greetings to a cordial American hand shake.

Contrary to the usual French custom, classes were held on Thursdays, but not, except for special lessons, on Saturdays. Saturday morning was devoted to outdoor work about the grounds and to free play. Saturday afternoons often found the whole group on hikes, and in the evening there were impromptu theatricals, readings, and music.

One can not fail to see that such a program was most conducive to health and that it offered a valuable counterpoise for the heavy scholastic work preparatory to the French baccalaureate. The students were ready to face this difficult and all important examination at seventeen or eighteen, possessing a healthy body plus that culture one expects in the educated young Frenchman. Such a school might well serve as a model even in this country where we have done better than the French in approximating a good balance between studies on the one hand, and sports and athletics on the other.

EARL G. MILLER

SOME CURRENT PROBLEMS IN BIOLOGY

BIRTHDAYS are the fashion this year of George Washington's bicentenary celebration. During the month of January there occurred an anniversary at the laboratories of the Rockefeller Institute for Medical Research, which unheralded to the world at large, was nevertheless of profound significance. I refer to the twentieth anniversary or "birthday," of Carrel's chick heart culture. I have not a record of the exact day in January, 1912, when this culture was started. That is unimportant. The significant fact is that this culture, or to be strictly accurate, the tissue grown from this culture is still alive,

actively pulsating, actively growing in its special culture chamber twenty years after it was started from a tiny bit of heart muscle excised from the heart of a chick embryo, placed in appropriate nutrient fluid and kept in an incubator at the temperature at which the development of the hen's egg proceeds. Why should the "birthday" anniversary of this culture be important? Let me ask a counter question. Who ever saw a hen twenty years old?

Centuries ago Ponce de Leon searched for the fountain of youth. He failed to find it. As has been the case with other fancies of men of other days, modern science has attempted to find an answer to some of the questions raised by such dreaming. Ever since the early Neanderthal race caught the idea of a possible survival after death and began to practice ceremonial burial, man has longed for perpetual existence. The biologist has asked, Why death? One answer has been found. Death is the penalty paid for an extreme of specialization which makes impossible the perfect interaction between the organism and its environment necessary for continued survival. That this is so has been abundantly proved by the work of Woodruff with paramecium, and that of Carrel cited above. There are many important problems which may be attacked by using the methods employed by these two men. Not the least of these problems is cancer.

Health! Its possession, next to life itself, is the most precious thing we cherish. How is it safeguarded? How may individuals keep well? How are entire populations protected from epidemics? How is pestilence prevented at times of disaster such as flood and earthquake? Here is a series of biological problems, the solution of which has resulted in deeds of heroism which make the exploits of military bravery seem tame.

One of the supreme needs of humanity is food. Some of us recently listened to an intensely vivid word painting of flood and

famine in China by Mrs. Charles A. Lindbergh. Fifty million people suddenly cut off from their usual food supply by a flood of unprecedented magnitude. We felt while listening in that the life of millions, of each and every one of us hangs upon a delicately balanced interplay of the forces of nature. Food! Absolutely essential. Upon what does it depend? Can we ever become independent of living things as sources of our food supply? What measures do we take to insure variety, abundance, and protection of our food? Biological problems, all of them.

Life! What is it? Whence did it come? How can its forces be controlled? Can biology offer any hints suggesting answers to these questions?

What has been the history of life and of man upon the earth? What influences has the life of the past had in controlling the destinies of life of the present? Questions these which biology can help us answer.

We are hoping to devote a part of the summer quarter at Harrisonburg to the consideration of these questions and others of a similar nature in a course on Current Biological Problems. We hope to make it inspirational and practically helpful to those who are teaching biology and allied subjects.

RUTH L. PHILLIPS

If you are rich, and are worth your salt, you will teach your sons that though they may have leisure, it is not to be spent in idleness; for wisely used leisure merely means that those who possess it, being free from the necessity of working for their livelihood, are all the more bound to carry on some kind of non-remunerative work, in science, in letters, in art, in exploration, in historical research—work of the type we most need in this country, the successful carrying out of which reflects most honor upon the nation.—THEODORE ROOSEVELT.

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