

first glance might appear relevant to hygiene are some briefer courses in physiology and anatomy; these are the only subjects in the curriculum that could in any way be interpreted as having a bearing on hygiene, and properly qualified instructors in preventive medicine have never taught anatomy or physiology and called it hygiene—as a matter of fact neither an anatomical nor a physiological approach to the subject obtains in our more progressive institutions. A person to become an instructor in any subject needs more than a single course in it. He needs many such related courses in fields contiguous to his specialty, which is equivalent to stating that he should major in the subject he expects to teach. No such training for the teaching of preventive medicine is apparent either in the present curricula in physical education training schools or in the teachers who conduct such work in these institutions. It must be apparent from looking over such curricula that physical directors are trained to teach exercises and games (and rightly so!) and not to teach preventive medicine or hygiene. This is a fine example for the application of the old admonition "stick to your own last," and it contains no more opprobrium than is found in the statement that a man with a medical training is not fitted to teach law. A thorough biological background and a medical education with special reference to bacteriology and preventive medicine are absolutely essential for the well equipped instructor in hygiene.

Calls for Thorough Preparation

The supervision of physical exercises and the teaching of games to those who may be considered as physically normal in the student body is a job for the individual who has been trained in these subjects and who has been in a school for the "big muscle" training in preparation for such work.

The production of highly trained teams in various branches of athletic sports calls for a rather high type of technical skill and as now interpreted usually means that if a man is to be a football coach he should have had some experience in playing football and have spent some time as an assistant coach before taking the responsibility for an attempt to produce a winning team. This differentiation between highly specialized training for a few in a college and some training of all the members of the student body in physical exercise has been greatly criticised and in meeting this criticism much has been said relative

to the possibility of this special training producing leaders, emphasizing cooperation and sacrifice upon the part of the individual.

Injuries resulting from athletics are for the most part of a rather simple and stereotyped nature from a medical point of view. They do not usually offer any extremely intricate problems for the average medical man, and many of these injuries, such as bruises, sprains and the like, can be easily taken care of by a trainer. It is extremely important that the trainer know his limitations and that he be sufficiently aware of them so that he can intelligently and immediately call in medical assistance in conditions that are beyond the scope of his training.

Should Cooperate Closely

Here again the department of medicine and the department of physical education should cooperate closely for the care of the injured athlete, for the athlete is primarily a member of the student body. It would seem that the care of such injuries would best come under the official medical department because excuses from classes dependent upon athletic injuries, particularly from subjects like military science where a certain amount of physical activity is necessary, should be known to the department of medicine in order to best serve the institution. The question of a separate physician for athletic teams makes for lack of uniformity in the handling of the athletes who are primarily students, unless this physician is a member of the regular medical department.

The question as to the relationship between preventive medicine as practiced in the medical department of our institutions for higher education and the physical exercise instituted by departments of physical education resolves itself into the necessity of physical exercise for health, or conversely, the lack of exercise causing disease. In approaching our problem it is well to remember that here as elsewhere "what's one man's meat is another man's poison."

For the greatest efficiency of athletic teams it is, of course, absolutely necessary to have a medical man in responsible charge of athletes because it is the tendency in some quarters to return the athletes to participation in sports before their injuries are completely well. This is really a shortsighted policy even from the point of view of the team, as it also is from the individual's viewpoint, for a subsequent injury to the same part frequently puts him out of the game for

the season or for good. The medical man should act as a buffer between the extremely enthusiastic coach, coupled with the enthusiasm of the youthful athlete, and the injury with its possible complications from the medical standpoint.

Before we can satisfactorily answer some of the questions suggested in the title of this article it is necessary for us to think of what it is that causes our mortality and morbidity and whether such causes can be overcome or the individual fortified against them through exercising his muscles. The enthusiast for exercise maintains that strengthening the skeletal musculature increases the strength of the internal muscles!—here indeed is an assumption for many a heart cannot stand this extra strain and due to inheritance or previous disease, or both, we get the familiar "athletic heart." We must remember that a great many illnesses and deaths have their origin in vestigial organs (for example, the tonsils or appendix) and no amount of exercise will make these healthy, that is, so that they will become resistant to disease. Other things being equal a used muscular tissue is probably more healthy than an unused one but is not muscular tissue, normally, our most resistant tissue to disease? And is this in any sense true of glandular and other tissues? And does it make any difference what the condition of the muscle is at the start, whether healthy or not?

Promotes "General Resistance"

The most that can be claimed for exercise is that it promotes "general resistance" to disease. Is it lack of exercise that produces an unhealthy body, that is, one with a "predisposition" to disease? The question is almost the same as asking what are the most important factors causing death and disease and this is only ascertained by a knowledge of relative mortality and morbidity. The list of diseases causing mortality and morbidity is a long one beginning with heart disease, kidney disease, tuberculosis, syphilis, pneumonia, cancer, colds and their complications and sequelae, inflammations, and the like, and continuing to those such as tetanus and rabies, which are relatively infrequently met.

With the exception of cancer (about which we know little and practically nothing of importance from the point of view of control or prevention) it will be noted from the above that nearly all our important causes of disease and death are due to the results of infections; either immediate or re-