place in a systematic, thorough study of the subject. The number of such experiments, and hence the length of the special courses, will naturally be very different in the various instances; thus experimental physiology of the eye will occupy more time than the physiology of the larynx. As many courses should be given at one time as there are instructors in the department. The student may elect the subjects that most interest him, but must choose a sufficient number to occupy him during the entire four weeks of instruction.

The afternoons of the days on which physiology is taught are devoted to physiological chemistry.

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PSYCHOLOGY.

THE invitation to talk about the methods of teaching psychology was to me in one way very welcome. All the year long I have done nothing with fuller conviction than to tell the psychologists that they ought not to meddle with methods of teaching, as they can hardly offer any aid. But there is one exception, and here I have at last a welcome chance to make the necessary appendix to my year's sermon; the psychologists ought not to trouble themselves with the methods of teaching which the other men apply, but they ought, in the highest degree, look out for the methods which they use themselves, as there is perhaps no science in which bad methods are so confusing and dangerous.

But the invitation came also as an embarrassment. The methods of psychology, on account of the many changes in recent years, have so far not had the time to crystallize; they have not reached the stage of an objective form about which the psychologists themselves agree, and it is a hopeless task to seek there anything which is more than a reflex of personal experiences. I felt this difficulty strongly and cannot offer, therefore, anything but an expression of my subjective convictions, which can claim in their favor nothing but the fact that they are based on observations in a university where the rather uncritical rush towards psychology has reached unexpected proportions.

The time is too short to demonstrate here, what even every outsider ought to know, that a scientific psychology is to-day in first line experimental psychology and that collections of instruments are thus the necessary, full laboratories the desirable background of teaching psychology. The audience, on the other hand, is here too various to allow a description of special important pieces of apparatus. I want, therefore, to emphasize merely questions of principle.

Such a question of principle it is to ask which place this experimental psychology ought to have in the lecture courses of the university. To say the experimental work ought to be the whole is absurd; that is possible for physics or physiology, but it is impossible for psychology. The physical sciences start with fundamental conceptions and presuppositions which are acknowledged without difficulty, while in psychology just the basal conceptions like consciousness, psychical causality, psychical elements, psychophysical parallelism are full of difficulties and certainly not open to experimental treatment. The usual way now is that the elementary treatment of mental life deals with this general theoretical book-psychology, while the more advanced lecture courses go forward to an exact experimental study of the special facts.

This seems to me a methodological blunder; the order ought to be just the opposite. I think, firstly, that the treatment of the theoretical questions in psychology is of no value whatever if it is given in an elementary way; every problem leads here to epistemological discussions which go far

beyond a sophomoric mind, and which are not simplified by avoiding the difficulties, but trivialized and falsified. Theoretical psychology is an advanced course for seniors and graduates. On the other hand, I think that experimental psychology can never be the object of a really advanced treatment in a lecture course. In physics or physiology the lecturer can reach the most advanced points because he can follow up the most difficult problems under scientific discussion with his experiments; not so in psychology. We must not forget that a psychological experiment is nothing but self-observation under artificial conditions. The lecture room cannot produce the conditions for any careful self-observation of every student beyond the most elementary questions. We can produce tone-sensations or color-sensations, or associations and space judgments, in a rough way for the whole class. If we try more we can do two things. Either we make demonstrations on one subject—for instance, reactions; then the whole class may see the person on whom the experiment is made, but the one person is really the only one who goes through the experience of the experiment; it is an illusion to think that the others get the advantage of the experiment too because they are in the same room. Or we choose experiments which every one can make individually at the same time—for instance, touch sensations; but it is clear that here only the most elementary problems are in question. Thus, wherever we come to a more complicated experimental question, the possibilities of the lecture room are at an end, and we have either to talk about experiments without making them—certainly a very bad scheme—or we have to shift them over to the laboratory courses, the only correct way. No other experimental science can come into this troublesome situation, because no other deals with self-observation, but we psychologists ought to confess that the experimental work of the lecture room cannot go beyond the first elements of psychology, and is of a simplicity that every high school boy can understand. We must give up the pose that our psychological work becomes difficult on the introduction of a chronoscope and a kymograph and a color wheel. It is logically endlessly simpler than even the slightest serious discussion of theoretical psychology.

Of course, I am speaking of experimental psychology, which must not be confused with physiological psychology. The latter, in its narrower sense dealing with mind and brain, is either a theoretical discussion of the psycho physical parallelism, and as such fully dependent upon philosophical arguments and independent of empirical observations, or it is a study of the special localizations and functions of the brain parts. The first belongs to advanced theoretical psychology; the second does not belong to a student's course on psychology at all, but to physiology. It is mere coquetry if we decorate our real psychological courses with physiological bric-a-brac.

My method of teaching psychology in Harvard is as follows: I give a large elementary course in psychology which hardly mentions the brain, but which is from the beginning to the end an experimental course, and it is our special aim to construct instruments on a large scale, allowing every student in the audience to go through the self-observational experience of the simple experiments. Theoretical problems are there not discussed, but only touched. Those who have passed this elementary course have now no opportunity to cover the same experimental ground once more in advanced lecture courses, hearing three decimals where at first only one was given. No, they have two alternatives before them. They either enter the laboratory or they go on with lectures called 'advanced psychology,' hearing there hardly a single word about experiments,

and certainly never seeing an instrument in the lecture room. The advanced course is a theoretical discussion of the fundamental conceptions in psycholgy. The course is very difficult, but the fact that about one hundred advanced students take the course this year shows sufficiently how earnestly they feel the need, in our time—in which a thoughtless playing with psychology has become the fad of society—of discussing the principles of that science from a higher standpoint, and not only as a superficial introduction into experimental psychology.

Those who are interested in the details of the experimental work and want to follow it beyond the first elements which the lectures offered enter the training course in the laboratory, performing a prescribed set of individual experiments, working in groups of two. The question how far this training course ought to lead offers again methodological difficulties. We tried different schemes. My assistants gave last year two courses, the first training merely in well-known experiments, the second training in the scholarly attitude of the psychological investigator by carrying out some small investigations from which no gain for science was expected. This year we have dropped the second course and welcome every one, already after a-half year's elementary training course, to the regular original research work of the laboratory, in which, of course, everything is adapted to the effort to work towards the progress of science. We have come to this shorter circuit because with regard to the pedagogical value of original research work psychology has again quite an exceptional position; the self-observation factor, which stands in the way of the experimental work in the lecture room, becomes the greatest advantage for the psychological education in the research work. In physics or physiology you take the part of the investigator or you are outside; in psychology you can take a different part—you may be the investigator or the self-observing subject. And this subject part is, as every experiment is self-observation, in no way a less important and less scientific factor of the research, and yet it is still free from the administrative responsibilities of the investigator who carries on the experiment. To work for a time as subject in different investigations—every student of my laboratory takes part in at least three different investigations of different fields—is thus the very best bridge between the simple training course and the work which points towards publication and the Ph. D. My advice is thus to open the doors of the research laboratory rather earlier than the other exact sciences would wish to do; to work under constant supervision some time as subject seems to me even a better preparation than any special training course. The psychological seminary finally has to accompany this highest stage by advanced debates and papers; this work, in Professor James' hand, alternates in Harvard between more general questions and problems of abnormal psychology. The only defect which I must regret in this scheme is that we have so far no specialists for animal, child and social psychology. Child psychology finds a refuge in the department of pedagogy, social psychology in the department of sociology. They find in many universities to-day a very large amount of good will in both departments, but—and that is the last methodological principle which I wish to lay down—good will alone is also for psychological studies not always sufficient.

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ANTHROPOLOGY.

ANTHROPOLOGY is one of the subjects that have been added to the university curricu-