or whether we shall spend it once more, when we can, in driving furiously back and forth on the crowded highways, catching glimpses of the countryside between the billboards. The transformation of the American conception of leisure from time to waste into time to learn is one of the major responsibilities of the museums.

It is not education to make a living that we require, but education to make a life. For many, perhaps most, jobs in industry men can be trained in two or three weeks. As mechanization increases and we become a nation of button-pushers, the time needed to learn how to push the right button at the right moment will shrink still further. When jobs are available the worker can now get and hold one with less experience and skill than at any time in history. The knowledge and background necessary to make a living are approaching the vanishing point. But the difficulties of leading a good life and being a good citizen are greater than ever. And since our education has been largely devoted to vocational training and something called college life, we are unprepared for these difficulties. They place a strain on the intelligence and character of our people that has become almost intolerable. With increasing leisure we do not know what to do with ourselves. With the responsibility of leading the way to a democratic world community, we are unprepared to make the sacrifices required by a thoroughgoing democracy at home and unwilling to face the fact that a democratic world community, which offers the only hope for permanent peace, can not be achieved without the sacrifice of prejudices dear to our hearts—prejudices about foreigners and their goods and prejudices about the participation of foreigners in political decisions affecting our lives. Yet a world organization is on the way. There can be no doubt about that. The swift advance of transportation is making it inevitable. The only question is, what kind of world organization will it be? Will it be a despotism of that power or those powers which can hold down the world by force? If so, it will disintegrate as allies quarrel or as the oppressed and downtrodden gather the strength to rise against their masters. Will it be a democratic world community? If so, the responsibilities of the American educational system assume such proportions that we can only weep at the colossal triviality in which it has been wasting its days.

If every man is to be free, then every man must be educated for freedom. If every part of the world is to join in a democratic world community, then every part of the world must understand every other part. Transportation will not do the job. Faster transportation is just as likely to lead to more frequent and more terrible collisions as to world peace. Any community rests on communication, and communication means understanding. As the college must pass from the country-club stage which it has occupied too long, the museum must change from a curio cabinet into an integrated part of an educational system dedicated to teaching men how to live human lives and how to live them together on a world-wide basis. This is the great educational task of the future. The record of Field Museum in the last half century has laid the foundations of its leadership in the next.

RECENT ANTHROPOLOGY. II

By the late Professor FRANZ BOAS

MODERN anthropological literature shows that intimate observations on individual lives are felt to be essential for further progress, and new methods have been devised to obtain the needed information. Some of these methods seem to me of doubtful value. It is obvious that, setting aside laboratory experiment, the only way to obtain the necessary information is through a most intimate and long-continued life with the people and a perfect control of their language. These conditions are rarely attainable, or those who fulfil the practical needs are often in other ways not equipped to obtain the information we seek.

One of the methods used to overcome these difficulties is to induce natives to write or tell autobiographies. The better ones of these give us valuable information in regard to the struggles of everyday life and of the joys and sorrows of the people, but their reliability, beyond very elementary points, is doubtful. They are not facts but memories and memories distorted by the wishes and thoughts of the moment. The interests of the present determine the selection of data and color the interpretation of the past. Goethe called his autobiography Fiction and Truth, and this is true of the autobiographies of elderly persons. It is similar to what happens in telling a tale. Quite recently Lowie has published versions of a Crow tale, told at various times by the same individual, which show remarkable variations in plot and motives. I have published similar records of the same tale, retold by the same informant after an interval of nearly forty years, which show the stability of formal elements and the variability of motives. This is much more intensely the case in records of personal experiences. The same person has told me incidents of his own life at one time as simple, matter-of-fact occurrences, at other times as

supernatural experiences. The form given depends upon the state of mind of the recorder at the moment. I do not doubt that this happens often in regard to accounts of early supernatural experiences. Whenever a young man is required to have a supernatural experience, he will be ready to interpret a convenient event in the desired way, and in his memory it will assume ever-increasing importance. In his records personal likes and dislikes may also affect the presentation of events, inclusions or omissions of pertinent data. In short the tricks that memory plays us are too important to allow us to accept autobiographies as reliable, factual data. They are reflections of the facts as expressed in the present mental condition of the informant. Particularly in the case of the North American Indian the fundamental changes of life that have occurred during the past eighty years make it likely that customs that were at one time highly significant have lost or changed their meanings and are now reinterpreted according to the present state of mind of the informant. Autobiographies, on account of the restrictions just mentioned and of the difficulty of assembling a sufficient variety of individual records, are of limited value for the particular purpose for which they are being collected. They are valuable rather as useful material for a study of the perversion of truth brought about by the play of memory with the past. The rest is not much more than an account of customs collected in the usual way.

If we want to understand the individual reactions to cultural patterns we should rather pay attention to the events of daily life; not only to what people are doing but also what they are talking about. Conversations within the family, discussions among friends, gossip of the village offer an inexhaustible source of data showing the reactions of people to customary behavior and illustrating their individual standards. When a younger brother upbraids an elder brother because he is too lazy to provide for the needs of his family, but first apologizes because he dares to criticize an elder brother, light is thrown on the constitution of the family that can not easily be obtained in another way. The approval or disapproval of the behavior of a particular person and the reasons given for it, particularly disagreements in judgment, furnish us with illuminating information on aspects of the individual reactions to culture. Observations of this kind require, of course, much time and particularly adequate knowledge of the spoken language, but they seem to me indispensable for a clear understanding of the relation of the individual to the culture in which he lives. The variety of situations and the number of individuals observed is also much greater than can be obtained by any other method.

Other material may be furnished by folk-tales. Their plots are based explicitly or implicitly on judgments of behavior; therefore they are a fairly safe guide for judging the attitudes of the people for right and wrong, proper and improper behavior. To give an example: The extent to which parents are allowed to punish their children is a frequently exploited problem in the tales of the Northwest coast of America. A chief has the duty to see to it that his son purifies himself preparing for the quest of a vision, but when he strikes his recalcitrant son, so that he runs away, supposedly to commit suicide, the father is expelled by his tribe, presumably because he has caused the death of the chief's successor. In other tales, the reaction against overweening pride or the help given to the poor furnish material that may be compared with actual behavior.

The desire for understanding the dynamics of cultural change has also led to the study of those situations in which actual changes may be observed. This is particularly the case when different cultures come into contact and new adjustments are required. The results of acculturation have been the subject of historical studies. In the spread and development of western civilization from the times of the early Sumerians and Egyptians acculturation plays a most important role. The same is true in eastern Asia. Unfortunately most of the processes of acculturation that happen under our eyes are those of the destruction of simpler culture by the overwhelming force of western civilization. Where an actual amalgamation has occurred, as among Indians in Latin America and among Negro communities in the New World, we see only the results, little of the processes. The readjustments that occur in India, China and Japan in their contact with the western world are probably those in which the effect of conflict of modes of thought, feeling and action can be studied most advantageously. Less violent conflicts occur in the migration of Europeans to other continents and in the consequent formation of new cultural units. I do not think that we are as yet in a position to tell where the scattered data on personal adjustments or maladjustments, of conflicts between generations in a changing culture, of the formations of new forms that eliminate the original conflicts, may lead us and what methods are best adapted to clear up these manifold, complicated phenomena.

During the past decades psychologists and medical men have taken a keen interest in anthropological data and have made the attempt to transfer their methods of research directly to the study of social behavior. It seems to me that this has led to much confused thinking.

The tendency of modern psychology is to reduce

observations to quantitative values. Thorndike declared at one time that "whatever exists, exists in some amount and can be measured." This is true if we remember that the term "to measure" is used in a much broader sense than what we ordinarily mean by it. I can measure a rod one foot long and add another foot in length, but I can not add two amounts of intelligence and make it a double intelligence. This is still more true when comparing groups represented by averages. I have tried to explain this in our discussion of anatomical types. We may speak of degrees of difference, but these are not additive and require special definition. This fact has to be borne in mind in all observations on so-called quantitative data of variable mental phenomena. Before using them we must know the significance of our quantitative values.

Another precaution is essential. Psychological observations and conclusions are based essentially on experiences in our own culture. To a lesser extent this is also true of medicine, particularly in regard to psychiatry, which has shown the greatest interest in observations made on primitive people. It is, therefore, of fundamental importance to know in how far it is justifiable to transfer our methods and experiences to groups of different bodily build and of different culture and the vexed problem of what is due to nature and what to culture comes up in acute form.

First of all the naive assumption that any kind of difference in bodily form must necessarily be correlated with some kind of behavior can not be accepted as proved. We may grant that the fundamental constitution of the body of the individual is dependent upon the activity of the system of his glands or upon any other factors that affect the physiological functioning of the body and that this is a determinant of behavior, but we have no indication that such traits, like color of hair and eyes, form of hair, form of head or nose, are in any way closely related with mental traits. Even observations on general constitution do not indicate a close correlation between form and function. To a certain extent racial types may be compared with constitutional types. Negroes are more leptosome than East Asiatics. It is quite a different question whether this would mean that the Negro behaves more like the leptosomes among Europeans, the East Asiatic more like the pyknics. Considering the weakness of this correlation among the Europeans and the fact that the leptosomy of the Negro is due to the greater length of the limbs it seems more than doubtful whether any correlation exists.

Some of the difficulties of transferring the results of observations in our culture appear in one of the most widely exploited psychological tests, the intelligence test. Since it is primarily intended to serve practical purposes its method violates a general principle of scientific procedure. It combines a great many distinctive activities into one single picture, while in scientific procedure we try to isolate so far as possible each element and correlate the results only after each has been treated separately. While this objection holds good merely for the scientific exploitation of the collected test material it is much more important for our problem to remember that the material on which the ultimate conclusions are based are individual reactions to phases of our culture and that, therefore, the experience of the individual in regard to these phases plays an essential part in his responses. I believe nowadays this is fully recognized by psychologists. It follows that the more diverse the cultures the less can a test based on the form of our culture give us any valid clue to estimate the intelligence of members of an alien society.

I fear that up to this time no methods have been found to describe or evaluate innate intelligence and still less innate personality. We have to learn to place individuals in strictly analogous situations and observe their reactions; but how can that be done? We know that the general social experiences and habits of individuals in the same culture vary considerably and that they vary still more in different cultures. We learn from the results of psychoanalytic studies, no matter how doubtful most of their results may be, that early experiences have a deep effect upon later behavior. At present I should be more inclined to rely on observations on behavior in which traditional habits play a comparatively slight role or may be readily recognized. Intelligent behavior in the solution of difficult problems that arise in everyday life and choice in situations that admit of various solutions combined with a knowledge of customary habits of the people permit us to compare with a fair degree of certainty the behavior of alien people and our own. My judgment based on long and varied contact with so-called primitives gives me the impression that intelligence and personality, vague as these terms may be, are distributed in about the same way as among ourselves. I wish I could see a clearer way to give a definite answer to this problem, but as long as we are unable to analyze more clearly what is meant by intelligence and personality I fear that we shall not be able to give a more definite answer to these questions. By analogy based on the distribution of physiological reactions of the body, we may infer that there are not material differences between members of our own and alien societies.

Since the assimilation of the individual to culture

is a gradual process some light on the development of behavior may be obtained through the study of infants and older children and through behavior during adolescence. The results so far obtained are promising particularly in showing how the experiences of early childhood determine behavior, partly by unconscious imitation, partly by the kind of behavior expected from the children and impressed upon them by educational methods.

The desire for quantitative exactness has led to the attempt to utilize statistics of observations on behavior for the purpose of characterizing cultures as a whole and of determining the extent of individual variation. I confess that I have serious doubts in regard to the value of such statistics. In early years I have indulged in such statistics of the geographical distribution of tales and their variants. I still believe that the method may be of value in such cases when we are sure of what we are comparing. Unfortunately there are too many cases in which the comparability of material is so uncertain that a statistical comparison is not admissible. The fundamental demand for the applicability of statistical treatment must be that we are comparing classes of phenomena that belong together. When I wish to compare the health condition of two cities and base my conclusions on mortality rates without knowing the age distribution of the population I obtain a meaningless result. There are so many unknown elements involved in questionnaires and in the listing of specific forms of behavior that we are seldom sure what the answer means. I believe every one will agree that the answers to a Gallup poll depend both upon the selection of the public and the formulation of the question. An Indian whose economic security is endangered by his relation to Whites will be more apt to talk to a White man about these troubles than to his neighbor who wants to marry his daughter. The greater certainty of conclusions reached by such statistics is fictitious.

There is one more subject about which I ought to speak, that I take up with some hesitation. It is the psychiatric approach to anthropological data. I hesitate because I am unfamiilar with the curative value of processes the theoretical value of which seems to me very dubious. I can see that the expression of organic mental disturbances in different cultures will lead to different manifestations and that in this sense the study of abnormal mental behavior may be helpful to the student of mental diseases, but I think it is very unlikely that it will help us much in understanding the normal phenomena of culture. I believe particularly that the use of psychoanalysis for attacking the problems of primitive culture can not bear the light of a careful critical examination. I accept as an important contribution the effect of experiences in early life upon the personality of the individual, but when the attempt is made to explain mythology, totemism, taboo on the basis of psychoanalytic theories I can not follow. There are so many hypotheses involved in each step that it seems to me that the results can no longer be called scientifically sound.

Reviewing the development of anthropology as a whole I think we may rejoice in the many new lines of research that have been taken up. That many of the new methods need improvement is obvious but unavoidable in new, untested lines of approach. There is perhaps some danger that, engrossed in the difficult psychological problems involved in the analysis of culture, we may forget the importance of the general historical problem with which our science started, but I am certain that with the broadening of our view the varied approaches to an understanding of the history of mankind will be harmoniously elaborated and lead us to a better understanding of our own society.

OBITUARY

DEATHS AND MEMORIALS

DR. LOUIS B. WILSON, for twenty-two years director of the Mayo Foundation, Rochester, Minn., until his retirement in 1937, died on October 5. He was seventy-six years old.

DR. ELMER DARWIN BALL, Assistant Secretary of Agriculture under Presidents Woodrow Wilson and Warren G. Harding, died on October 5. He was seventy-three years old. Dr. Ball had been dean of the College of Agriculture of the University of Arizona and director of the agricultural experiment station. At the time of his death he was on leave as professor of zoology and entomology.

DR. LEO BUERGER, of New York City, surgeon and urologist, died on October 6 at the age of sixty-four years.

DR. ARTHUR T. EVANS, head of the department of botany at Miami University, died on October 6 at the age of fifty-five years.

DR. SAMUEL RUBEN, of the University of California at Berkeley, died on September 28 as the result of an explosion in the chemical laboratory. He was thirty years old. His work was in the field of photosynthesis and he was engaged on investigations with the Office of Scientific Research and Development.

DR. GEORGE ARNOLD BURBIDGE, dean of the Mari-