

THE GAINS FROM SPECIALIZATION.⁴ The largest gain which the higher animals secure in comparison with lower, less organized forms, arises from the adaptation of structure to function. In the most primitive animals the same kind of tissue has to perform all the divergent functions of locomotion, seizing and ingestion of food, digestion, assimilation, excretion of waste and reproduction, while in the mammalian body the specialization of tissues and organs for the various functions and the increased efficiency with which all are consequently performed, are too evident to need extended comment. Some social insects produce physically divergent types of individuals adapted by structure to perform different functions. In the familiar case of the bees, the bulk of the community is made up of "workers" and the reproductive function is specialized in the queens and drones. Certain species of ants and termites present a very complex social structure containing a dozen or more structurally specialized types of individuals. One of the most interesting facts in regard to human society is the absence of definite structural specialization of individuals. Human organization is an artificial thing, a culture product. Natural differences undoubtedly exist among human beings, and are taken advantage of, more or less, in fitting individuals to specialized functions; but the differences seem to be accidental, and unpredictable. Certainly human beings do not become fused into a super-organism in the manner of the cells in an animal body. It is in fact a matter of the greatest uncertainty and one of the most disputed questions in the whole field of knowledge, as to how far observed differences in kinds and degrees of capacity are innate and how far they are the result of "nurture" and the subtle influences of environment and social suggestion. The tendency of scientific study at the present time is to place more and more emphasis on the environment and less upon congenital structure. In any case, human differences are not so definitely

⁴ It will be recalled that we are using the word "specialization" instead of the familiar "division of labor", not only is labor divided, but it is differentiated and co-ordinated, and the other elements or factors in production are likewise "specialized"—often more extensively and vitally than the human factor.

transmitted by inheritance as to be predictable in advance; they have to be discovered and developed and the individual fitted to his place in the system by some artificial means. There is no mechanical solution of the human social problem, as in the case of the animal organism or even of insect societies; human beings have to form themselves into an organization as well as to control and operate it when constructed.

1. UTILIZATION OF NATURAL APTITUDES; ESPECIALLY THOSE OF LEADERS AND FOLLOWERS. However, we are safe in asserting that there are some innate individual differences in human capacities and aptitudes, and the first in the list of gains from organization results from taking advantage of them. One social problem is to discover such differences and utilize them as far as possible. They can never be predicted with any certainty before the birth of the individual, in fact they cannot usually be discerned at any time in life from clear external marks; and in the course of the development of the individual they become so largely overlaid with acquired traits that they can never be separated from the latter. The most important natural differences of which we can be reasonably sure are those of physical stature and dexterity and (with much less certainty) of general mental activity. The most important differentiation in function, or division of labor, between individuals is the separation between direction and execution, or the specialization of *leadership*. It may well be true that able leaders are in general also more competent workers or operatives, but the gain from superior direction is so much more important than that from superior concrete performance that undoubtedly the largest single source of the increased efficiency through organization results from having work planned and directed by the exceptionally capable individuals, while the mass of the people follow instructions.

2. DEVELOPMENT AND UTILIZATION OF ACQUIRED SKILL AND ACQUIRED KNOWLEDGE. The principal quality in man which gives him superiority over the animals is his ability to learn, including learning to know and learning to