Fungi:
Polyporus sulfurea—sulfur mushroom
Coprinus ornatus—shaggy-mane mushroom

IBP units involved.—Subcommittee on Terrestrial Productivity and Subcommittee on Freshwater Productivity, U.S. National Committee, IBP

Funding.—To be developed

Director.—To be selected

Coordinator.—To be selected

6. Ecology of Migrant Populations

The rapid technological, socioeconomic and demographic changes of the recent past have profundly altered the nature of physical and psychological stresses operating upon many human populations. Some stresses, such as bacterial diseases, have diminished in importance; others, such as noise, mechanical injury and air pollution, have intensified. Medical intervention is saving and repairing an increasing number of persons with serious congenital defects. Dietary changes and decreases in physical activity have introduced new stresses; industrialization and mass communications have caused unparalleled demands upon symbolic learning, memory and fine psycho-motor coordination. The tolerances of man to these changes and the degrees of hazard, on one hand, and of potential, on the other, that they may present to development, physiology, behavior, longevity and genetics in man are still poorly understood. Their evaluation consequently represents a key task in understanding human adaptability.

The changes described are largely encompassed in the process of urbanization, and particularly affect migrants from farm to inner-city localities. For this reason, a series of comprehensive bio-social assessments of selected migrant populations is planned as part of the United States contribution to the International Biological Program. Bio-social assessments constitute quantitative ecological descriptions of a group's size and composition, biological (including genetic) and sociopsychological characteristics, habitat, and major behavior patterns so designed as to (a) identify and measure that group's constituent biological populations, and (b) the levels of fitness, adaptive mechanisms and selective pressures characterizing each population. These assessments would be applied to (a) migrant (especially rural) source communities that are relatively homogeneous in race and socio-econmic status, of statistically adequate size and subject to significant out-migration to urban areas; and (b) the migrating components of these communities in receiving areas especially urbon. Specific sites are to be located in rural Mississippi among Negroes and among whites, and in receiving areas, especially Chicago. Other studies are planned upon the base and migratory components of Spanish-American and American Indian populations.

A study of migrants and their relatives in source areas for the city of Fairbanks, Alaska also appears desirable, since it would aid in understanding similarities and differences in White, Eskimo and Indian adaptations to the special environment of a sub-arctic city. It is also hoped to correlate these studies with research under the IBP on migration to Israel, and perhaps in Canada (Ottaws-Hull and Yellowknife areas).

Description of Studies.—The researches contemplated are to be prospective studies of at least three years' duration. They would necessitate a large variety of observations and measurements. To estimate fitness in genetically defined populations, both cross-sectional and logititudinal indications would have to be marshalled. The former include age-and-sex specific data on height, weight, nutritional status, physical maturation and aging, physical work capacity, heat and cold tolerance, glucose tolerance, allergic sensitivity, vision, hearing, dexterity, cognitive capacity, etc. The latter are age-and-sex specific actuarial measures of fecundity, morbidity, accidents, behavioral disturbances, and mortality.

Fitness in given populations is always relative to specific types and intensities of selected pressures and a particular inventory of adaptive processes. Selective pressures may be conceived as imbalances between an individual's conditions and capacities, on one hand; and on the other, his psychological needs and socio-psychological anticipations. They can be inferred, on the basis of biological and socio-psychological theories, from evidence on an individual's (a) locus and anociated micro-environmental exposures to temperatures, light, dust, pathogens and allergens, etc.; (b) behavioral; rythums and activity patterns; (c) group and intimate community status; (d) nutrition; (e) explicit goals, and (f) projections and fantasies. It must be stressed that even in families selective