



MAP MAKING—Thomas P. Pendleton, chief topographic engineer of the U. S. Geological Survey, is checking a model including two Multiplex aero-projectors, which aids in map making for Uncle Sam.

CARTOGRAPHY

Strategic Areas Mapped

Many localities are being charted adequately for the first time by photogrammetry methods that are three to five times faster than older ways.

► MANY STRATEGIC areas in America are being adequately mapped for the first time, using methods three to five times as fast as pre-war methods, William Emory Wrather, director of the U. S. Geological Survey, reported to Secretary of the Interior Harold L. Ickes.

Less than half of the United States has been comprehensively plotted, Mr. Wrather disclosed, despite the 167 years of our national existence. Much of the area requiring additional mapping lies in the central and western states. But there are also regions along the coast which have not been mapped to show the actual shape and elevation of land surface, streams and drainage, the location and extent of cities and towns, roads, dams, forests, boundary lines and other culture.

"In certain strategic areas along the coastline," Mr. Wrather reported, "mili-

tary requirements have resulted in a 60% increase over last year in the square mileage of mapping produced monthly by the topographic branch of the survey."

Of 228 areas in which mapping was completed last year, 166 were required by the military.

Improved stereoscopic plotting of aerial photographs, called photogrammetry, is only about a third as expensive and much faster than former methods when used under favorable conditions. In effect the procedure brings the terrain right into the laboratory.

To get a three-dimensional view, the operator views plates of aerial photograph negatives through an optical system which is basically like the stereoscope through which the older generation once peered for natural-depth scenic views as a parlor pastime.

By moving a small plotting device,

called a tracing table, over the map sheet, the operator then makes a pencil drawing of the culture, drainage and contours. A photographic copy of the drawing is then taken to the field for checking features that could not be identified on the photographs, and to secure names.

Post-war uses, as well as military service, is foreseen for the maps since they are valuable in planning and executing flood control, river and harbor improvements, power and irrigation projects, highway location and construction, forest administration, erosion control, drainage enterprises and mineral and soil surveys.

Science News Letter, October 2, 1943

NUTRITION

Warning Against Using Synthetic Protein

► A WARNING against use of what might be called a synthetic protein fare for human nourishment appears in a report by Dr. Anthony A. Albanese and Miss Virginia Irby, of the Johns Hopkins Hospital (*Science*, Sept. 24).

Proteins, the nourishment for which one eats meat, cheese, poultry and so on, are made of chemicals called amino acids. Certain of the amino acids are essential for human nutrition, and a mixture of these might form a synthetic protein fare for sick people unable to eat protein food or to utilize it properly. It has been reported that animals can live on such a mixture of the 10 essential amino acids without any other source of the protein building blocks.

The Hopkins scientists tested this by giving one group of rats an amino acid mixture and comparing their growth and survival with that of another group fed amino acids as they occur naturally in casein, the chief protein of milk. The casein was given in the forms of an enzymatic digest or an acid hydrolysate, such as might be used for nourishing patients who could not eat or properly digest protein foods.

The mixture of essential amino acids was found "to be inferior from a nutritional point of view" to the other two sources of amino acids. The failure of the mixture of acids to nourish the animals adequately may be due, the scientists suggest, to poisonous effects of unnatural forms of the acids which the animals could not utilize. Until further work shows whether or not this is true, they state, "it would seem wise to employ only the natural forms in human therapy."

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