

# SCIENCE

FRIDAY, JUNE 20, 1919

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## THE AIRPLANE IN SURVEYING AND MAPPING

THE airplane, while not a product of the war, owes its present prominent place to the war, and but for the war its development would have been retarded many years. It had few practical uses from the time the Wright brothers first flew their machine at Fort Myer, Va., in 1909 until 1914. It was a plaything to amuse the holiday crowd.

The war changed this situation. The allies and the central powers almost immediately saw the great importance of the airplane in battle and the best brains and energy of the warring nations were given to the problem of making the airplane perform what a few years ago would have been considered miraculous things.

War planes were made for various purposes, which I need not enumerate. But the most important thing done from the airplane was photographing the enemies' lines to obtain many kinds of military information, such as positions of batteries and ammunition dumps, changes in trench systems, troop movements, etc.

The same methods, with some modifications, are now being considered in connection with the mapping of extensive areas by various organizations of this country. In fact, some work has already been done and experiments are being carried on which promise excellent results.

There is so much misinformation regarding surveys and maps, that it seems appropriate for me, as the head of the oldest map-making bureau of the government, to present the mapping situation to this congress, both for your information and as a matter of record.

Surveying and mapping have long histories and the development of the methods now employed took centuries. But the method of airplane surveying has developed like a mushroom. To what extent is it applicable to our needs? This I shall endeavor to show.