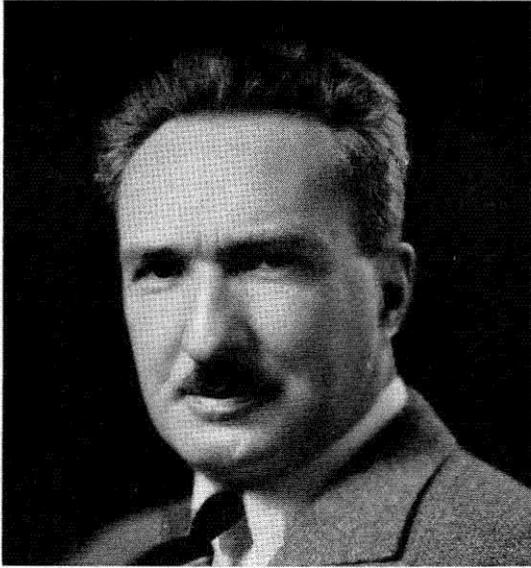


ALUMNI YOU SHOULD KNOW



HAROLD R. HARRIS
Air Transport Executive

HAROLD R. HARRIS

On the wall of a busy executive office on the 59th floor of the Chrysler Building far above most of New York City hangs a worn, pencil-marked map of South America. That little white map is as important to South American air transportation as the Magna Charta was to England's political economy.

Behind that map is the story of Captain Harold R. Harris '22. In the days when California Tech was known as Throop Polytechnic Institute, "Husky" Harris was the mainstay of the school football team. Many games were brought through to victory through the hard fighting and intelligent leadership of Harris.

In 1917 Harold Harris left the Institute to join the U. S. Army Air Corps. By 1918 he was flying the Alps with the A.E.F. under Major Fiorello La Guardia, now Mayor of New York City. While in the A.E.F. Captain Harris commanded the first American flight across the Alps, Milan to Paris.

After a period in which he instructed pilots in the flying of Caproni Bombers in Italy Captain Harris returned to this country. From 1921 to 1925 he was with the Army Air Corps test station at Dayton, Ohio, where he tested all types of experimental planes from Barling Bombers to Helicopters. When he left the army in 1925 Captain Harris held ten world's records in aviation.

In view of the unusual situation presented by the First World War and because of Captain Harris' engineering achievements in the Air Corps the Institute awarded him the degree of B.S. in Mechanical Engineering in 1922.

After leaving the army, resourceful Harold Harris entered a new venture, the spraying and dusting of cotton plants with insecticides from the air. The process proved so effective and successful in the South that Harris was soon called to Peru to introduce the process there.

Here's where the little white map enters our story. For many-sided Harold R. Harris is also a dreamer, a planner, an engineer. He was impressed with the magnitude of distances in South America and the slowness of available transportation. Deserts which would make Arizona and Nevada look like dense forests in comparison stretch for thousands of miles. But due to the rugged terrain and sparse population few good roads exist.

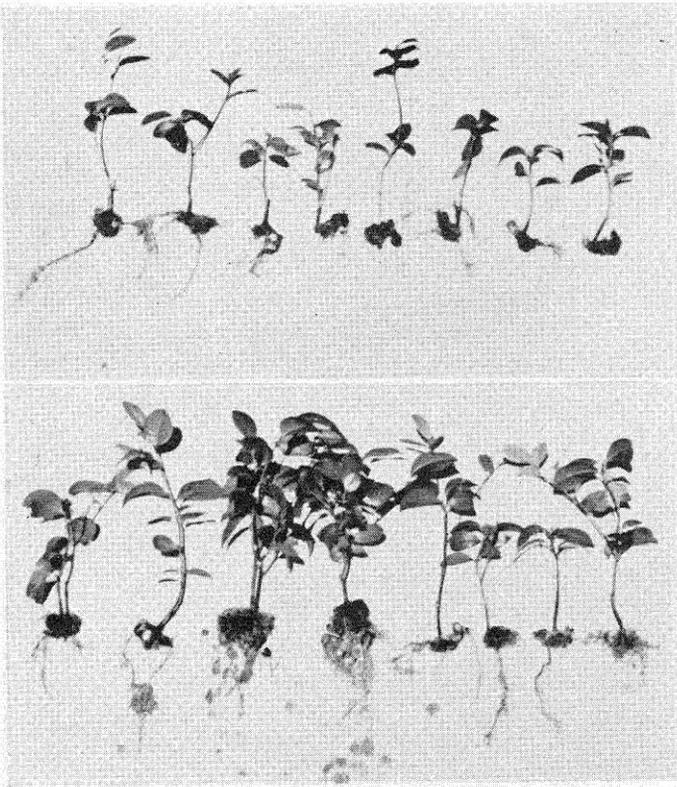
Day after day Harris' pilots clattered back and forth over the cotton fields of Peru while at night planner Harris sat sunk back in an old chair on the stone porch of a little hotel figuring, measuring distances, plotting courses on the little map.

Harold Harris is a modest talking man. You wangle from the Captain only a few quiet but powerful words of his story. But when he has an idea to put across his persuasive abilities are ample. Soon he was talking brass-tacks with South American banks and commercial houses. That was fourteen years ago. That year the French established their first limping airmail line from Buenos Aires to Natal. That started the skipper moving. Always a thorough man, he travelled completely around South America down the west coast to Mollendo, overland to La Paz, down through the interior to Buenos Aires. He continued up the east coast with various stops to get his feet on local soil,—Sao Paulo, Santos, Rio, Recife and on around the big hump to Trinidad and on to New York. When Captain Harris made a survey he made a survey.

He landed in New York in October, 1927. Next morning with his little white map and his old brown brief case full of facts he visited banker Richard Hoyt, of the banking house of Hayden-Stone which had financed the cotton dusting company. He spread out the map before him and revealed his dreams of a commercial airline for the Pacific coast of South America. Hoyt soon called in Juan Trippe, who was just then busy establishing his newly assembled Pan American Airways. Pan American was focusing its attention on bridging the gap between Key West and Cuba and was toying with the idea of later extension to South America. Harris was two years ahead of them.

Hoyt also called in the owner of the old and honorable Grace Steamship Company which had for years operated a line of steamers down the Pacific coast to Peru. Between them Peruvian Airways Corporation was formed, which later became Pan American-Grace Airways.

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Camellias grown in sand without and with Vitamin B₁.

been found for the discoveries which have been made concerning the plant growth hormones. It also is true, however, that investigation of the more theoretical aspects of this subject has been prosecuted. Thus an answer to the question of how auxin promotes growth has been sought since 1932. With the cooperation of Dr. J. Koepfli, of the Chemistry Division, the exact atomic configuration essential to growth activity in the auxin molecule has been determined. Studies of the movement of auxin within the plant have been made particularly by W. G. Clark. The atomic configuration essential for vitamin B₁ activity has been determined in collaboration with Dr. E. R. Buchman, of the Chemistry Division, and the relation of vitamin B₁ to enzymatic activity in the plant has been elucidated. In fact the practical uses for plant hormones are a by-product of the more theoretical studies.

Another activity of the plant physiology group has been the training of students capable of carrying on independent growth hormone research and of spreading the growth hormone lore to other institutions. Much of the work mentioned above is associated with one or another of the students who have obtained the Ph.D. degree in plant physiology at the Institute.

I hope that I have made it clear that plant physiology as it is understood at the Institute is the study of the plant with the object of determining the chemical substances or processes related to each individual plant activity. This "chemical plant physiology" requires the cooperation of chemists, physiologists and hybrid chemical physiologists, and such cooperation is

abundantly realized at the Institute. Despite the considerable progress made during the past ten years, there is no danger of an immediate scarcity of new problems, for it is now clear that there are hormones for the regulation of the different phases of plant growth from the germination of the seed to the falling of the fruit.

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The Author—James F. Bonner did his undergraduate work at the University of Utah. He came to the California Institute in 1931 as the first graduate student in plant physiology. He obtained his Doctor's degree in 1934 and then spent a year in Holland and Zurich as a National Research Council Fellow. Since 1935 he has been at the Institute as, successively, Research Assistant, Instructor, and, now, Assistant Professor of Plant Physiology. The work on vitamins and wound hormone mentioned in the article has been done by him in conjunction with the various people mentioned.

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Alumni You Should Know

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The first little four-passenger Fairchild plane lifted its rubber feet from the sand of a racetrack in Lima, Peru, on September 13, 1928. The little ship buzzed its way from Lima to Talara inaugurating the first scheduled air service on the South American west coast. Harris was general manager of the line as well as chief pilot.

For the most part of the succeeding ten years Harris has lived in Lima, Peru, directing the extension of "Panagra" up and down the west coast until now it extends from the Panama Canal to Valparaiso, Chile, and then makes a spectacular hop over the high Andes to Buenos Aires on the east coast, connecting with other parts of the Pan American system at both ends.

Recently Harris has moved to the New York headquarters of the system where, when not away on a flying trip over the far-flung lines of the System he occupies the lofty office with the little white map on the wall as Executive Vice-President of Pan American-Grace. Besides the little white map, among the prominent furnishings of his office is a History of Latin America, a globe and a map of the commercial air lines of the world, perhaps evidence of plans for further conquest.

— Chester F. Carlson, '30.

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in the right place."



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