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EXPLORING SOUTH AMERICAN JUNGLES BY AIRPLANE

By A.M. Jacobs, McCook Field Correspondent

Looking bronzed and fit from a year's work with the Alexander Hamilton Rice Expedition, which had been engaged in exploring the wilds of the Amazon River basin in Brazil where no white man had ever before penetrated, Captain A.W. Stevens, Air Service, who recently returned to McCook Field, was warmly welcomed by his many friends.

According to Captain Stevens, who acted as official aerial photographer and mapper, the experience was one of rare interest. Dr. Rice, leader of the expedition, has been for some twenty years a student of this part of South America and had already made some half a dozen journeys into it, each time venturing farther into unknown territory or covering a little different area.

On this last expedition a party of twelve sailed with Dr. Rice from New York, equipped with symbols of progress which explorers never used before - radio receiving and sending apparatus, an airplane and two aerial cameras (the K-3 and K-6). The plane was a Curtiss "Sea Gull" hydroplane, flown by Walter C. Hinton, well remembered as the pilot of the NC-4 on its Trans-Atlantic flight.

Sailing up the Amazon, the party of explorers embarked at Manaus, in this case not a mere spot on the map but their last outpost of civilization, for thereafter they were to encounter only small settlements or Indian huts. Here the "Sea Gull" was assembled. About fifty natives and Indians were hired for paddling the canoes, carrying supplies, clearing the way through jungles, cooking, and general camp labor. Supplies were collected and final preparations made for the departure into the interior. Two launches were equipped with radio.

After some delay, caused by one of those frequent South American revolutions, the start was finally made on August 20th. A small river steamer was taken up the first part of the Rio Negro, one of the great tributaries of the Amazon and so called on account of the blackness of its waters. Lieut. Hinton and Captain Stevens flew ahead of the party, making photographs and sketches of the country and waterways over which it would later pass. Each night for a time the hydroplane returned and anchored beside the steamer. Often when flying above the black water of the Rio Negro, it was so difficult to tell the elevation of the plane above the mirror-like surface that it would come down in the steamer's wake.

At the direction of Dr. Rice, the oil and gasoline was cached at certain landing points, to be used after the steamer had gone back to Manaus and the plane would be returning alone. After the termination of steamer navigation was reached, gasoline and supplies were sent forward in light launches and later, as the party worked up from the Rio Negro into the brown waters of the Rio Branco, the launches were stopped by rocks and rapids. From then on supplies were transported by canoes, but there were stretches where it was impossible to navigate even this light craft and they had to be carried on the shoulders of the natives.

From the Rio Branco the route lay into the Uraricoera, a stream with swift, wild current and very little known. Many years ago one Brazilian went half way up this river, and two Germans had followed its course to its junction with the Rio Parima. Otherwise, except for the Rice parties, it traversed its course through the jungles unmolested by civilization save for a few native Indians who brought dugout canoes and forest products to the nearest settlement now and then. From the Uraricoera, the party went into the Parima River.

The Parima River rises in the eastern slope of a range of mountains, known as the Sierra Parimas. Several years ago Dr. Rice followed almost to its source the Orinoco River, which flows down the western slope of the Sierra Parimas, believing that if he could follow the river far enough into the heights

he would find that the two great rivers, the Orinoco and the Parima, had common headwaters. At this time, with a party of eight "civilized" Indians he made camp on an island, when suddenly a shower of arrows surprised them and they found an army of hostile Indians rushing down upon them with decided malevolence in their greeting. Dr. Rice was forced to fire upon them, first above their heads and then into their ranks to hold them off long enough to make a get-away. This incident tended to break up the expedition at that time, for to have continued upon a rapidly diminishing river, lined with dense jungle, in which hostile savages lurked, would have been but a rash form of suicide. With a larger force and more modern equipment, however, Dr. Rice had come back hoping to reach the same goal, but this time approaching by way of the Parima River from the East.

The plane progressed up the Parima River to where a fork, known as the Aracasa, flows into it. Beyond this it was impassable because of a series of steep canons and rapids. To this point Charles Bull, a former Harvard athlete, with the aid of four Indians transported with great labor 70 gallons of gasoline. Forty of these precious gallons were put in the gas tank of the plane for the purpose of making the flight to the Parima headwaters. The formidable canon with its raging waters was found to extend four unbroken miles, the occupants of the plane being the first white men in history to gaze upon this bit of earth. The highest landing of the entire trip was made above these rapids, as the progress from Manaus had been constantly into higher country and the river here was more than 1,000 feet above sea level. The flight was continued 120 miles farther until the stream became a mere creek. Going up the river the bends were carefully followed, but in returning some of them were cut to save gasoline. In one place the flight lay for thirty miles above dense forests, where a forced landing meant that the aviators, if uninjured, would have had a long job cutting their way back to the river. Tools had been placed in the plane with which to cut away the wings and remove the engine with the idea of using the hull as a boat if necessary, but it is doubtful whether the hull would have withstood the rapids. Fortunately, the engine gave no trouble.

This stretch of the river proved quite deserted. Indian "maloccas" (huts) had appeared at the four-mile canon and at the headwaters. Otherwise, there were no signs of human life for 120 miles. It was impossible to land at the upper Indian camp, the river being so narrow and crooked that, unless the plane were directly over it, the trees hid the water completely from view. Moreover, these Indians, a particularly savage tribe known as the Guaharibas, were at war with those below and had made it understood that no intruders would be welcome. The lower Indians, friendly enough to whites, held them in great dread. Eating their fish and game raw, this tribe is evidently unacquainted with the use of fire; nor do they use canoes, but travel always through the mountains and jungles on foot. Just above this Indian clearing, the stream traveled down a canon a mile long, the water showing white from end to end. For some distance the plane traveled on, but there was nothing to be seen but the ridges of the dividing range as far as the eye could reach, and as more than half the gasoline had been used, it was necessary to turn back. A complete sketch of the river and its tributaries and aerial views of features of importance had been made. These sketches were delivered to Dr. Rice to be fitted to exact locations later by the surveyors of the party through their night observations of the constellations with the theodolite.

The last of the gasoline available for pushing into the wilderness having been used, the plane was ready for its homeward journey to Manaus. From 3 degrees south of the equator, the plane had traveled to 3 degrees north of the equator. The total flying time from Manaus and return was 174 hours, and 12,000 miles were covered, many trips being made to connect with the canoe party in the rear.

Dr. Rice and his party are continuing their journey into the country shown on the sketches made from the plane. A five-mile path will be cut around the four-mile canon, the Indians carrying the lightest supplies and canoes overland and embarking again above. At the point of the one-mile canon, it is thought that even canoe travel will have to be abandoned, the party taking to the Guahariba Indian trail, which probably leads across the divide to the Orinoco source. Whether they will get there, considering the dense forest, the steep hills, the high falls and long stretches of rapids, not to mention hostile Indians, one can only wait and learn.

Since Ulysses, the stories of wanderings in strange lands have ever held their fascination for the ear of man. Captain Stevens, extremely conservative in his accounts, has not been able to iron out the thrills.

The prime question in such journeyings is always one of physical adjustment to uncivilized surroundings, strange climates, foods, customs, and conditions. In the tropics there is the great question of malaria from which the white man tries to keep immune through quinine, the use of mosquito netting while sleeping and general care of the health. The expedition did not have smooth sailing all the way. On the river steamer most of the crew came down sick. Dr. Koch-Grunberg, an eminent scientist with a distinguished record in South American research, was stricken and died within ten days at the little settlement of Vista Alegre, not shown on any map. The airplane mechanic had to be sent back to Manaus for treatment, leaving Lt. Hinton and Capt. Stevens to care for the plane. Lt. Hinton was down several times but would not stop flying. So great was the drain on his vitality, however, that on one flight to 6,000 feet where the temperature dropped from the accustomed 85-95 degrees to 55 degrees, the chill was enough to put him on his back for several days. Stevens' stories of Hinton's grit savor of heroism.

Game and fish were plentiful, the Indians keeping the camp well supplied. Tapir meat was mostly eaten. Monkey, wild pig, and large lizards were often eaten by the Indians. The monkey and pig were not so bad, according to Capt. Stevens, who said he drew the line, however, at lizards. Farinha, a yellowish-white Indian root, somewhat resembling our grape-nuts in hardness and coarseness, was used to a considerable extent.

There was "water, water, everywhere", but in it was a strange fish called the "Biranhya", with sword-like teeth which ripped the flesh of the unwary to the bone; hence, swimming was indulged in only where safety was assured. Many of the natives had fingers missing, torn away by the "Piranhya" while paddling a canoe.

Insects were the great pests. Thousands of ants swarmed over the plane when it was anchored near shore. Fortunately, however, the fabric was not to their taste, so they did no harm. Spiders had to be continually poked out of the venturi tube to keep it registering. Mosquitos, chiggers, and "piumes", a small insect whose bite immediately drew blood, were not conducive to the gaining of superfluous flesh.

The amazement and fright of the Indians, some of whom had never seen a white man before, at the appearance of the plane may be imagined. The semi-civilized ones called it the "bicho grande" (great insect). There is an appeal to the imagination also in the picture of a party encamped in a far land, mostly jungle - a land where the tropical stars are strangely brilliant, where natives wear long rods through their ears, and "howler" monkeys scream in the night - receiving the time from Arlington by wireless, or listening to a jazz concert broadcast from KDKA, Pittsburg, U.S.A. It was by radio that the news came through when Capt. Stevens and Lt. Hinton were supposedly "lost". Forced to beach the plane to make repairs when a submerged part struck a rock in landing, the river had suddenly dropped and they had had to wait patiently for eleven days before the heavy rains brought the river up sufficiently for them to get it afloat.

Capt. Stevens is most enthusiastic about the airplane for exploration purposes and hopes to return to the same country at some future time, with a plane perhaps of the Douglas type, having greater gas capacity and longer range of travel.