Super Terrestrial—"Aerial Submarine"

SUPER TERRESTRIAL is the suggested name of the latest thing in flying machines. It will be an "aerial submarine" kind of a thing. This sounds like an Irish bull, but it readily suggests the thing itself—an enclosed machine which will protect both the machine and the flyer from the air.

High-flying has lately proved so interesting that it fascinates both the aviator and the scientist. "The Roof of the World" is evidently a most astounding place. And as it is a dangerous thing to try to reach it, it is just the place that the daring want to try to reach. A scientist worth his salt is a man with an imagination—and that imagination is busy these days with conditions super terrestrial.

What little we know of these upper heights makes us keen to know more. For example, we know of heavy trade winds blowing many miles above the earth at such a terrific speed that could they be utilized in accelerating machines, men might circle the globe at several hundred miles an hour. Also there are indications of a rise in temperature after a certain altitude is passed, of belts of mysterious gases and vapors, and of other strange phenomena, all of which combine to make a trip to the outer edge of the atmospheric ocean surrounding this planet the most romantic and alluring of all voyages ever attempted by man. So it is small wonder that planes are made for specially constructed airplanes, designed to meet the conditions existing at great altitudes and to minimize the dangers that have hitherto rendered high flying such a hazardous undertaking. The Super Terrestrial is not yet an accomplished fact, but it seems to be well on the way. Major Schroeder, having recovered from the effects of his recent 36,000-foot flight, is said to be interested in the construction of such a machine, in which he hopes to reach the altitude of 50,000 feet. It is further reported that Louis Breguet, a French aeronautical engineer, has announced that an engine has been perfected capable of ascending 100,000 feet, or nearly nineteen miles, and that flight to that altitude is immediately in prospect. The main feature of the new type of aircraft will be an enclosed fuselage or cabin to protect the aviator and the machinery itself.

"The 'Super Terrestrial' would seem to me to be the answer," said August Post, secretary of the Aero Club of America, giving the proposed carrier the name he himself had coined, as quoted in the New York Tribune by Arnold D. Prince.

"From what man already has experienced in his attempts to pierce the heights he has learned that some form of protection not yet devised is necessary. Something designed along the lines of the submarine would seem to be what is needed.

"The inclosed cabin for the aviator suggests itself as the most sensible scheme. Sitting in this air-tight compartment, he would be within easy reach of the levers controlling the mechanism and regulating the supply of oxygen needed by himself as well as by the super chargers by which air at sea level pressure is now fed to the carburetors in altitude flights.

"He would not only be safeguarded against the physical hardships which have beaten him back heretofore, but, with adjustable propellers capable of increasing their purchase on the rarefied atmospheres, he could push his way into levels now beyond his reach."

What is it like up there among the stars, or even a little lower down?

Some things we know already.

We know, for example, that some distance above the earth's "atmospheric envelope," but below that stratum of "inflammable air" which science has discovered, are trade winds which blow from west to east with unfailing regularity; and we know, too, and this is even more reassuring, that at that level it is far less cold than had long been supposed.

For some of this knowledge we are indebted to scientists like M. de Bort, discoverer of what is called "inversion of temperature," and for the rest to our own courageous aviators, and to balloonists like Henry Glaisher and his assistant, James Coxwell, both Britons, who in September, 1862, rose to an altitude calculated by them as about seven miles, which was higher than that attained by Major Schroeder, the American flyer, in his recent sensational "jump" at Dayton, O.

Glaisher's experience was especially valuable from the standpoint of the person who wants to know "what it is like up there" because the aspirator quit working at an altitude of five miles.

Writing for the British Association for Balloon Experiments as to what happened after reaching the five-mile level, he said:

"Up to this time I had taken observations with comfort, and experienced no difficulty whatever in breathing.

"Then, having discharged sand, we rose still higher. The aspirator became troublesome to work and I began to find difficulty in seeing. . . . I could not see the column of mercury in the wet bulb thermometer, nor the hands of the watch, nor the fine division of any instrument.

"Shortly after I laid my arm on the table, possessed of its full vigor, but on being desirous of using it a little later I found it powerless. I tried to move the other arm; I found it powerless also. I tried to shake myself and succeeded, but I seemed to have no limbs.

"I dimly saw Mr. Coxwell and endeavored to speak to him but could not. Then, in an instant, intense darkness overcame me, so that the optic nerve lost power suddenly, but I was still conscious with as active a brain as at the present moment, while writing this. I thought I had been seized with asphyxia and believed I should experience nothing more, as death would come unless we speedily descended; other thoughts were entering my mind when I suddenly became unconscious.

"I cannot tell anything of the sense of hearing, as no sound reaches the air to break the perfect silence of the regions between six and seven miles above the earth."

The balloon finally began to descend after Coxwell, who retained consciousness even longer than his chief, had managed to pull the valve rope with his teeth.

Both men regained consciousness after the balloon had descended several thousand feet, and they managed to make a safe landing.

Two facts having a direct bearing on the question as to atmospheric conditions above the earth were established by them. One is that sounds like that made by passing railroad trains can still be heard at a height of about four miles, but that at six miles there is perfect silence.

The other is that up to a certain point, scientifically referred to as the level where "inversion of atmosphere" occurs, the fall of the mercury averages about one degree Fahrenheit to every 300 feet.

In April, 1875, M. Gaston Tissandier and two companions confirmed these findings when they rose from Paris in a balloon to a height of nearly six miles, but in this case the expedition was marred by the fact that both companions of M. Tissandier, having less stamina than he or the British aeronauts, died before the gas bag returned to the ground.

If further corroboration is desired as to conditions as they exist on the "first lap" of the aerial journey into the void they can be had from the experiences of the aviators who, since the advent of airplanes, have tried to reach the "lid of the world's atmosphere."

Two of the most prominent of these, at least among the American aviators, have been Major Schroeder and Roland Rohlfs, who have engaged in a unique contest for highest records above the clouds.

Major Schroeder in his flight a few weeks ago attained an altitude of 36,020 feet, at which height his thermometer registered 55 degrees below zero centigrade, or 67 degrees below zero Fahrenheit. So, in his case, as well as in that of Rohlfs when he reached 30,300 feet in July last, and that of Adjutant Casale, of the French army, who rose 33,137 feet several months ago, the average of a fall of one degree in temperature to every 300 feet of altitude was fairly well maintained.

Moreover, in all these flights, when the men had passed above the four-mile level and had risen beyond the screen of atmospheric particles which make our "sky," they entered the stratum in which absolute silence reigned and in which vision was remarkably clarified.

The firmament above became almost black, due to the absence of light refraction; the stars were easily visible, even in brightest day, and the cold was terrible and intense.

But in each instance certain phenomena were observed, which brings up the next question of importance to the inquirer as to conditions "up there," and this is the subject of "inversion of temperature."

For a great many years man believed that temperature invariably changed with altitude, and that as height increased there was always a corresponding drop in the mercury.

M. de Bort proved that not only does the principle of increasing cold cease to function at an altitude of from six to eight miles above the earth, but that exactly the opposite occurs, and from there up it constantly grows warmer.

Sounding balloons with self-recording instruments have been sent up to a distance of seventeen miles and have invariably confirmed this discovery.

So, then, the situation presented to those who are planning the Super Terrestrial and arranging to launch man on his greatest adventure in the air is this:

They know—as, of course, do we who are fairly consistent readers of newspapers—the conditions as they exist up to six or seven miles. It is there that nature plays the parts with which we are most familiar. There thunders roll, lightning flashes, clouds gather and elements clash in never ending strife. It is from there that we get such wintry storms as recently experienced, and where the humble drama of rain, snow, sleet and weather unfolds itself.

They know, too, that "atmosphere," as we know it, although in constantly thinning quality, extends above the "weather strip" to a height of about twenty to thirty miles, but beyond that, what?

It is here that real difficulties will begin, and the Super Terrestrial will encounter its greatest obstacles—provided, of course, that long before that bourn is reached the presumptuous craft has not been destroyed.

Here new dangers will appear in the shape of drifting "ice clouds," which for imaginative purposes may be likened to icebergs; the void will assume a totally alien aspect; meteors and shooting stars will occasionally flash across the path, and the traveler will enter the boundary of "inflammable air," or pure hydrogen.

Passing through this—always supposing, of course, that it is not snuffed out long before like a peanut shell under the foot of an elephant—the Super Terrestrial will emerge into the stratum of helium which on earth is created from radium and encountered in practical quantities only in test tubes.

Then—but perhaps this is enough for the moment. Even the most voracious seeker of knowledge as to "what things are like up there" will have been satisfied long ere this, and the first voyage of the Super Terrestrial need not be charted further.

"Provision would, of course, have to be made for changed conditions," Mr. Post concluded, in touching on the mechanical necessities of the undertaking. "Of course, with the thinning of the atmosphere the Super Terrestrial would encounter less air resistance, and provided the propellers were adjusted to increase purchase, tremendous speed would be attained.

"The propellers would revolve much faster and the craft would shoot ahead like a meteor.

"And it—that is, the Super Terrestrial, if you desire to call it that—is the next thing on the cards."

DEW HAS VITALIZING EFFECT

Abundant Proof That It Possesses Invigorating Action That Affects Growth of Plants.

Dew is vitalizing, not entirely because it is water but because it possesses an invigorating action due partly at any rate to the fact that it is saturated with oxygen, and it has been stated that during its formation peroxide of hydrogen and some ozone are developed. It is not improbable that the peculiarly attractive and refreshing quality that marks the early-morning air has its origin in this way. The difficulty of inducing grass to flourish under a tree in full leaf is well known and is generally explained by saying that the tree absorbs the nourishing constituents of the soil or that it keeps the sunlight away from the grass and protects it from rain. It is doubtful whether any of these explanations is true, the real reason most probably being that the vitalizing dew cannot form upon the grass under a tree, whereas as a rule both rain and light can reach it.

Really "Bored to Death."

The expression, "bored to death," is no mere fanciful figure. A person may actually die from boredom. The Medical Press, in commenting upon this subject, refers to a statement by Dr. W. H. R. Rivers, that "interest in life is the primary factor in the welfare of the people." Doctor Rivers contends that the dying out of native races is due not so much to what the white man has introduced in the shape of new diseases and new modes of clothing, housing and feeding, as to the fact that by uprooting native institutions, without providing adequate substitutes, he has "deprived them of nearly all that gave interest to their lives."

Unexplored Libya.

Italian Libya now comprises the two provinces of Tripolitana and Cirenaica and lies along the northern coast of Africa, between Tunis (French) on the west and Egypt on the east, in longitude from about 9 to 23 degrees east. The extremely northerly part of Libya is at about the parallel of latitude 33 degrees north; the southernmost point is unknown, as the territory runs south into the unmapped Sahara indefinitely.

A Clean Sweeper.

Frank A. Munsey, who has now added the Gordon Bennett newspapers to his long string, is a very critical employer, and many a clean sweep occurs in his various offices.

It is said that a visitor called at one of Munsey's offices and asked the office boy if Scribbs, the reporter, was in.

"I dunno," said the boy. "I ain't seen today's reporters yet."

An occasional domestic storm is necessary to clarify the matrimonial atmosphere.

Vivacity is fine when you don't want to just rest.

MORALE AIDED BY MUSIC

Fact Brought Out by the War Bound to Have Great Effect on Future Generations.

"Music makes morale," and so promptly music was enlisted in the war. Song leaders were appointed at all the training camps and immediately the glory of real music was spread before the millions of men as a reinforcement and aid to the idealism which had brought them into the war.

From then on the soldiers had music individually, in masses, in groups. They made it themselves, it was made for them by our finest artists. They had phonographs. They had records by the million. The process of musical education was swift, and the pupils were apt. Now they have returned to us men who know good music as a large part of their life and entertainment, have become reasonably apt performers themselves in a great many cases. What must this mean to the country? It must mean that the people as a whole are readier than ever before to listen to it as well as to be taught it.

Allot Land to Eskimos.

It is announced from Ottawa that the Canadian government has decided to reserve for the remnant of the Eskimos a small part of the territory over which they formerly ranged at will in the varying pursuits of fishing and hunting. The reservation is to consist of Banks and Victoria islands, north of the vast region, wide as the continent, known as the Northwest territory, and far north of the arctic circle.

From this reservation, and apparently the waters immediately adjacent to it, the white hunters are to be excluded; and those who have begun operations on Banks island will be ousted. Thus the resources needed to sustain Eskimo life will be reserved for the Eskimo.

Burying and Berrying.

It was in the blueberry season, and she was showing him around the small town.

"That," she said, as they drove along, "is the burying ground," pointing to the cemetery.

"I noticed a number of people with pails, going that way," he remarked absent-mindedly.

"Perhaps you thought they kicked the bucket," she said flippantly, as she skidded round the corner into the road leading to the State hospital.

Naturally.

"Why are you lashing yourself into such a state of excitement?"

"Because I want to get off the beaten track."

Natural Result.

"Your friend seems buried in thought."

"Yes; he is in a grave reverie."

Class rule is the worst menace to democracy.