Super Terrestrial—"Aerial Submarine"

International Photo.
Schroeder

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Rohlfs

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."

FASHION : WORLD

Styles Afford Subject of Interest to All People.

Always Something New Regarding Clothing Designed for Women and Their Beautification.

It is sometimes said that fashions are talked about so much that nothing new can be said of them, but when one remembers the important part they play in all civilized countries, both from a commercial and an artistic standpoint, observes a fashion writer, it would seem to be a subject which touches every one in some way and in which all people are more or less concerned.

Some may claim that it is a frivolous topic and that they are indifferent to it, but if they recall what has been said, that it affects financially more than half of the world's workers, and that the remainder of society are interested in clothes because they wear them, it would seem to involve in some way every civilized person and be a subject about which there is constantly something new, however cleverly written the articles concerning them may be that have appeared from time immemorial.

The industrial value of clothes begins way back in the growing of the wool, the cotton, the flax, mohair, mulberry trees, the getting of skins and mining of precious stones and metals.

From there it passes through the various processes of refining, polishing, manufacturing, weaving and merchandising until finally it reaches the use for which it is destined—clothing for all people of the civilized countries.

Education, culture, necessities and luxuries all show the influence of clothes as a commercial factor, and the more clearly we realize this the more interest shall we have in the subject and the more clearly shall we see how necessary and how attractive the subject really is in its many varying phases.

Needlewomen of the faraway islands of the sea, bending patiently over their lace to adorn the gown of the society queen, or the drawn work to bedeck the table of the high official of the nation; the silk growers of the orient or the cotton growers of the South, many of them seeing but the one gain, financial—all contribute to the great commercial factor which some designate "frivolous" and which society calls "fashion."

CHIC HAT AND DAINTY VEIL

One of the best models that has come from Paris for spring and summer wear and its simple elegance makes a wonderful frame for any face. It is of old rose crepe de chine embroidered with old rose silk and is draped with a prettily figured veil.

JADE GREEN CHIFFON GOWN

© Western Newspaper Union

This evening creation of jade green chiffon will be "just the thing" for tunning evening wear. Violets, orchids and crystal beads make this lovely gown one that appeals.

One Way to Wash Bedding.

An easy way to wash bed quilts or comfortables is to take a small scrub brush and a pail of suds and scrub well the most soiled parts. Place the article over a table to do this. Second, place article on clothesline and rinse with the garden hose. Let the full force of water soak the quilt or comfortable well. This may need be done several times, but the result is a good, clean comfortable without pulling apart the lining.

To Remove Rust Stains.

Iron rust has a most astonishing way of appearing on garments. Sometimes a pin will be a bit rusty and leave two little brown spots in a most conspicuous place. Wet the spot with a drop of lemon juice, add salt and put on more lemon juice. Put in the sun and when the salt is dry the rust spot will be gone. If the sun refuses to put in an appearance for the day, hold the stain with its saturated solution of lemon juice and salt over steam. The rust will be removed.

For Little Folks' Frocks.

One of the latest and really most sensible things for the children's frocks is unbleached muslin. It lends itself admirably to decoration, too, especially when made into "Peter Thompson" suits.

Hats of Black Lace.

Hats of black lace, with and without straw, malines or tulle, are much in evidence. Many—in fact most—of these hats are on the large picturesque order.

New Veil Changes for Milady

Face Covering Lends Note of Personality and Distinction—Adds Completeness to Outfit.

When an attractively groomed woman adjusts her smart-looking little hat at a certain angle and fastens over it one of the clever new spring veils the effect is ravishing.

Personality and the final note of distinction may be expressed in the mere cobwebby substance of the veil. It adds a completeness to the simple tailleur and street dress.

After a strenuous day of shopping the woman whose small street hat is snugly veiled returns home as neat and trim looking as when she left.

It is generally understood that the street veil is not appropriate in the evening. More and more, however, the American woman is appearing at the restaurant and theater in her severely tailored suit or gown, with her close-fitting toque nicely veiled. And she harbors no qualms as to being correctly dressed.

In fact, the latest fashions are showing the more elaborate hats with veils. For instance a charming wrought creation of black tulle and silver lace appeared in a box at the theater.

The fair spectator watched the play from behind a thin tulle veil, which was extended from the crown of the hat, just beneath the nose—much as the oriental lady is veiled. And, by the way, there is a decidedly oriental touch to the hats shown this season. Hardly a tulle hat is shown without the drop of tulle at least over the eyes.

Another gay little model hat was seen in one of the smart shops of interwoven ribbons of blue, gold and brown, against a horsehair brim which is satin threaded in gold squares. There is a gold ribbon around the brim and from this a short brown tulle veil is extended.

A hat of black horsehair with a low crown banded in black satin ribbon, tilts at the back, and droops under a beige lace veil.

Many of the new veils are edged prettily and hang loose and full. Some are close fitting over the face and long and flowing down the back. In fact there is a style of veil for every face; heavy figures, French dotted and exquisitely fine meshed veils are equally attractive in the new spring collection.

When You Frame a Picture.

Where are all the inexpensive frames one used to buy for photographs, amateur water color sketches and the like? It is disheartening to find all the frames nowadays priced at from three or four dollars up—and not including glass or mat. The best way is to carry in your handbag a bit of paper exactly the size of the picture requiring a frame, then some day when you run across a bargain table of framed prints you will have your measurement handy and can pick up your frame and discard the print therein.

For Evening Wear.

For evening wear is a dress of black satin with the entire skirt embroidered in rhinestones.