EMPIRE AIR ROUTES PROPOSED BY BRITAIN TO FORM HIGHWAYS OF PEACE

London.—From London to Canada in two and a half days, to India in five days, to Capetown in six days, to Australia in eleven days and to New Zealand in thirteen days. These were the possibilities of the air which Sir Samuel Hoare, British Air Minister, has submitted to the Imperial Conference.

"There is to-day no technical or operational reason," Sir Samuel declared, "why, by aeroplane or airship, London should not be brought within a fortnight of the farthest cities and territories of the Empire. Sir Samuel devoted himself to civil aviation, and proposed the organization of long-distance Empire air routes beginning in the Far East and from Australia to Capetown on the mosaic plan. "We must," he said, "each of us insert our particular stone in the design."

His proposal, Sir Samuel said, involved no subsidy. It involved nothing more than co-operation between one Government and another, and between military and civil flying. Sir Samuel pressed that the Dominions and dependencies should create and maintain landing grounds in good order. He held that the airship would carry out the long-distance, non-stop air journeys of the future, and indicated that two airships were now being built in England which should, with a normal load of freight and passengers, be able to fly without refuelling in good weather a distance of 4,000 miles. There would be promenade decks outside the cabins and ample smoking and dining rooms.

The aeroplane and the airship were really complementary to each other, the British Air Minister said. It was necessary to organize both along lines of long-distance flying, the aeroplane being invaluable for short-stage traffic, and particularly needed at present, when the airship program was still in the experimental stage.

Sir Samuel pressed that the Dominions should co-operate in preparing for airship development. To this end two things were essential—highly efficient meteorological information and the erection of mooring masts.

"In a year's time," Sir Samuel proceeded, "these two airships should be completed. It is then proposed to carry out adequate home trials and subsequently to fly one of these airships regularly to and from India for a full period of trial in tropical countries. When these trials are completed it is hoped, if the Dominions so desire, to make demonstration flights to the Capitals of the Empire." Sir Samuel's wish was to see a commercial airship line started at the earliest possible moment between Great Britain and the Dominions. He further suggested that before the next Imperial Conference there should be an Empire air conference to discuss developments.

Premier Stanley Bruce observed that flying had developed so much in Australia that taking an aeroplane was now like taking a taxicab.

Tommies Strip for "War" in Truck Efficiency Test

In Britain's next "little war" the British Tommy may go into battle metaphorically, "stripped to the buff" instead of carrying a load of up to eighty pounds. A combatant soldier's "baggage" will be cut down to his weapons and ammunition if a test now being carried out in divisional manoeuvers at Aldershot shows he can safely be relieved of the burden in his pack when marching to the fighting line.

Exercises in which highly mobile troops are engaged against larger but less mobile forces help to answer the question of whether a soldier can rely on motor transport to deliver when and where he may need them all impediments, coats, pack, haversack, rations and field dressings which formerly he carried into action. A general substitution of motor vehicles for the present horses and wagons will follow if the test is a success.

Yorkshiremen Invoke Old Saxon Law Defense

A curious echo of pre-Norman England was heard in a Daresbury Yorkshire court when three men, who were charked with damaging crops, invoked in their defense a certificate that they were "burleymen." Officers known by this title in Anglo-Saxon times, constituted a primitive village court, which adjusted all local disputes in accordance with Roman law, or local custom.

After the Norman conquest the name was retained, but their jurisdiction merged into that of the manorial courts. Burleymen survive only in the north of England, where they are in some manors still appointed to assess damage to growing crops and other minor farming matters.

A Lamp of Remembrance.

In a long wide corridor that leads to the "Chief's" room at Scotland Yard stands a lamp that is always alight. It is the "Yard's" memorial to its Civil Servants who fell in the war.

This lamp, not unlike one of Old London's street lanterns, has been alight for months. In daytime it is only when you approach close to it that you realize it is still burning, but it will burn day and night for as long as Scotland Yard remains.

Inscribed on it are the words: "In memory of those members of the Civil Service staff of the Metropolitan Police Force who laid down their lives."

Violet Rays for Eyes.

Surgeons have succeeded in restoring sight to diseased eyes and by standardizing the method treatment have opened the way for a new attack on blindness, said A. J. M. Tarrant, secretary of Moorfields, London, the biggest eye hospital in the British Empire. A year's experiment with a tiny mercury vapor lamp throwing out ultra-violet rays, has been successfully concluded.

The secretary said the violet-ray treatment had been successfully used in cases of threatened total blindness.

Danes to Make Milk.

Artificial milk, which is asserted to possess all the qualities of fresh cow's milk, is to be manufactured in Denmark. The product is said not to be merely a substitute for milk as the real butter fat is replaced by vegetable fats and the addition of vitamine gives it character of fresh milk.

Smile.

Smile and the world smiles with you;
Frown and you frown alone,
For the cheerful grin will let you in
Where the frown is never known.

British Delegation

The upper photo is that of Sir William Mackenzie, G.B.C., K.C., chairman of the British delegation investigating industrial relations between employers and the employed in Canada. The lower photo is that of Fred W. Field, British government senior trade commissioner in Canada. The party is also gathering information on the methods in which trade disputes are settled in the United States.

It Is Very Important—

—To treat a customer well even if he does not buy.

—To judge a college by what we send as well as by what comes home.

—To give the railroads some encouragement if we want good service.

—To see that the rich also get justice in the courts.

—To enforce all laws if we want any law to be respected.

—To deserve our rights if we expect to demand them.

—To give good attention if we want to get a good speech.

She—"How dare you try to kiss me!"

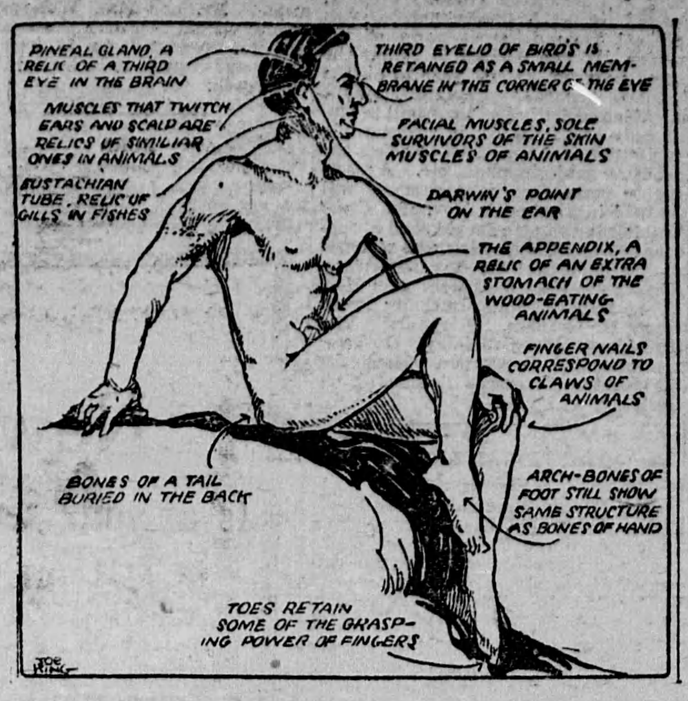
He—"Well, I'd been in the war in France and—"

Mirrors That Deceive.

Mirrors with a slightly convex surface, which have the result of slimming down the person using them, are said to be popular in American dress salons.

BLOOD TESTS PROVE EVOLUTION

Scientists Say it Shows Relationship of Man to Apes.



The sketch calls attention to the so-called vestigial organs in man. Evolutionists claim these are conclusive proofs of their theory of the origin of man.

Secrets of Science.

By David Dietz.

The biologist classes Man among the primates. He believes that the man-like apes are man's nearest relatives upon earth.

Neither Darwin nor any other biologist ever said that man was descended from a monkey.

But the biologist insists that just as various types of mammals can be traced to common ancestors so can man and the man-like apes. Somewhere thousands of years ago a division took place in the development of a certain type of primate. One branch developed into the man-like apes. The other developed into man.

In closing our survey of geology, we noted some of the fossil remains of man which have been found. Trinil man, Heidelberg man, Piltdown man, and so on. These go to prove that man had ancestors who resembled the anthropoid apes much more closely than does the present day man.

But there is no doubt in the minds of biologists as to the relation of man to the man-like apes.

The first proof of the relationship lies in the study of anatomy. Man and the man-like apes agree in a most remarkable fashion. There are differences in size and shapes. But there are the same bones arranged in the same fashion in each. There are the same blood vessels and the same nerves.

Man and apes are attacked by the same bacteria and suffer many of the same diseases — tuberculosis for example.

The blood of a man when transfused into a dog behaves in a hostile way, causing the destruction of the red corpuscles.

Human blood mingles freely with that of the man-like apes.

There are more complicated examples which prove the same thing. The blood-fluid or serum of a rabbit which has human blood injected into it, forms a cloudy precipitate when mixed with human blood.

It will form almost as heavy a precipitate with the blood of the man-like apes.

In the case of other apes there is only a slight reaction. In the case of the lemur it is weakest of all. Thus the experiment not only shows man's relation to the ape but his degree of relationship to various types.

Another proof of man's relationship to the animal world is the presence of so-called vestigial organs in his anatomy. These are relics, so to speak, of organs which once were important but which lost their importance as man evolved from the primate stock.

The best known of these rudimentary organs is the veniform appendix. In certain grazing animals it is a highly important organ.

Certain muscles which now perform no function but which originally twitched the ears and the skin of the face are in the same class.

Many mammals possess a membrane in the eye known as the third eyelid. There are vestiges of this in man.

Another proof of the relationship to the ape is the hair upon the arms and legs. The direction in which it grows corresponds to the direction of the hairy growth of the man-like apes. Embryology furnishes other proofs of man's relation to the other forms of life. The human embryo in its early stages resembles the embryo of the fish in its early stages. Later it resembles that of the reptile and still later that of other animals.

Name Lake After Hudson's Bay Co. Governor.

Red Lake, the scene of mining activity in Patricia district in northwestern Ontario, was a centre of fur-trading activity 125 years ago. The great map of Canada made by Aaron Arrowsmith, 1795-1802, from information supplied by the Hudson's Bay Company shows the lake by name with Red Lake House upon it. The present Gulrock lake on Chukuni river bears the name "Prince of Wales" lake. Pakwash lake on the same river is shown "L' Paquash" and Lac Seul as "L. Sal." The latter lake, by the way, is shown on the map of Peter Pond of date 1790, as lake "Alone," the translation of the French "Seul." West of Lac Seul on English river in the position of present Barnston lake is shown "Gov. Weggs" lake, evidently commemorating Samuel Wegg, who was Governor of the Hudson's Bay Company from 1782 to 1799. The Geographic Board of Canada has recently approved of the name "Wegg" being applied to the lake adjoining Barnston lake, sometimes called Sandbar lake.

Stocking Lore.

There are many quaint superstitions connected with the stocking. It is extremely lucky if a stocking is accidentally put on inside out, and on no account should it be taken off and changed. The luck is all the greater if the stocking is the left legged one.

Another quaint idea is to place a stocking under the pillow when sleeping the first night in a fresh bed; to be quite correct, I believe, the stocking has to be the one that has been worn on the right leg during the daytime. Whatever the sleeper dreams that night is sure to come true.

When a young girl marries before her elder sisters, it is still the custom in some parts for the unmarried sisters to dance in stockinged feet at the wedding. Whether this is an act of humiliation or to bring them husbands, too, I know not, but rather suspect the former, because in Scotland the elder unmarried sisters are sometimes presented with green stockings. These are sent anonymously by some so-called friend, as a gentle hint that the recipient is "on the shelf."

If To Be Clever.

If to be clever means that I must sneer
At every honest effort to be good,
Must tear to pieces all the brave revere,
And scorn what isn't clearly understood;
If only what is rotten can be art,
Lord, keep me from the sin of being smart!

If to be clever means that I must jest
At all that men hold sacred, and disdain
The simple teachings telling what is best,
Must serve the passions for my pocket's gain;
If brilliance means an utter lack of heart,
Lord, save me from the sin of being smart!

If to be clever means that I must see
All that is base and vile and call that real,
And finding honor, swear it cannot be
Because I've known some men to lie and steal;
If wit must tear all gentle worth apart,
Lord, save me from the sin of being smart.

—Edgar A. Guest.

A Good Reporter.

Was Helen then so starry-eyed?
Was Troy so very tall?
And were the windy plains so wide?
Was there a Horse at all?

Perhaps they told old Homer
Things were of different size.
Perhaps a returning roamer
Told tales for blinded eyes.

But the blind man heard them, yearning,
So he raised his lyre and sang,
And the toyless towers were burning,
And the plains with battle rang.

And Helen's face went launching ships
The young died, and the hoary,
And Troy is down in dust and chips
—And Homer got the story.

—Rollin Kirby.

Old Egypt's Dogs.

The Egyptians had several kinds of domestic dogs, including the hound and wolf-dog.

AERIAL SURVEY AS AID IN MAPPING

During the past two seasons planes piloted by the Royal Canadian Air Force have tracked paths back and forth across great stretches of northern Ontario, Manitoba, and Saskatchewan, taking photographs for the making of maps which will be of the greatest value to prospectors, foresters, geologists and others interested in the development of Canada's hidden resources. The areas covered, lying just beyond the fringe of present settlement but within easy access of it, are destined in the near future to play an important part in the progress of the Dominion.

The production of these maps is in the hands of the Topographical Survey, Department of the Interior. It is necessary that the photographs cover the whole area, and accordingly, before each operation a sketch is prepared showing the parallel flight lines required to accomplish this object.

How does the aerial navigator track out these parallel lines of flight across these great and little known expanses? This undertaking properly falls to experienced surveyors, and a Dominion Lands surveyor therefore accompanies each plane as navigational officer.

Of course, he makes use of existing maps but these only show a few of the principal features which, having been plotted largely from explorers' notes, are often misplaced by many miles. The navigator must therefore exercise a nice discretion in their interpretation. Although the magnetic compass is of great assistance too much reliance must not be placed upon it; one must understand its vagaries, its changes in declination over short distances, its response to local attraction, and the influence which magnetic disturbances may have upon it. The force of the wind, often complicated by cross currents, must be reckoned with, its general direction and velocity may vary greatly in a single flight, and drift must always be allowed for in laying off flight courses. At all times the aerial navigator must exercise quick and unfailing judgment for in an hour the plane covers a distance which would require several days travel by canoe.

A most disheartening condition occurs when, in the midst of a flight, clouds intervene below the plane and blot out the landscape. Photographing must then be suspended and the plane piloted back to its base. The navigator is then faced with the task of returning another day and picking up the exact point at which he left off so that the work may be properly carried on.

Such conditions are often met with even though flights are made on those days during the summer when the weather is most suitable for photography. That such operations have been successfully carried out is attested by the fact that it has been possible to make maps of a sufficient order of accuracy for the purpose required, based on aerial photographs, covering a large part of our northern country.

DETERMINING THE DISTANCES OF STARS

PROCESS OF TRIANGULATION USED IN THIS WORK.

Dominion Astrophysical Observatory at Victoria, B.C., Co-operates With Other Stations.

That the stars differ in their apparent brightness is self-evident. A thoughful person might surmise that this is due either to a difference in their light-giving powers or to their being situated at different distances from us. As a matter of fact both are contributory causes and it is only when we know the distance of a particular star that we can have an idea of its real luminosity.

The distances of the nearer stars are determined by a process of triangulation somewhat similar to that which the surveyor uses to obtain the distance of an inaccessible mountain peak. Naturally, the base line must be enormously longer than any used upon the earth and the one that best serves the purpose is the diameter of the earth's orbit about the sun. The small relative shiftings in the positions of the stars as photographed from each end of this 186,000,000-mile base give us data from which to compute their distances.

Through the co-operation of half a dozen observatories in Europe and America the distances of several hundred of the nearer stars had been determined by this triangulation method before the war and this number has been materially increased since. Knowing, then, their distances and their apparent brightnesses, their real or absolute luminosities are easily computed. It has been found that there is a great disparity amongst them, probably a million-fold being not an extreme ratio. Our own star, the sun, while 100 times brighter than some that are reached by our telescopes, is nevertheless outshone 10,000 fold by others which are designated "giant" stars.

Predict the Luminiosity.

An examination of the spectra or analyzed light of these stars of different real luminosities revealed peculiarities by which it was possible to reverse the process and predict the corresponding real brightnesses. That is to say, if we were to secure the spectrum of a star the distance and real brightness of which was unknown we could, from these tell-tale peculiarities, determine the absolute brightness of that particular star. It is then a simple calculation to find out how far away a star of such known brightness must be to appear of the brightness we see it in the sky.

It is in the search for these tell-tale peculiarities in the spectrum that the Dominion Astrophysical Observatory, Department of the Interior, at Victoria, British Columbia, has taken a leading part among the observatories of the world. Many new lines in the spectrum have been found which are specially sensitive in this regard and the added material has greatly improved the accuracy of the method. A list of over 1,100 stars the distances of which have been thus determined has been issued as a publication of the observatory.

The distances cannot be quoted in miles but a popular standard of measurement is the "light-year" which is simply the distance light will travel in a year at the rate of 186,000 miles per second. At this rate light reaches us from the sun in eight and one-third minutes yet the distance of the nearest of the fixed stars is such that light requires four and one-half years to traverse the distance and consequently we say it is 4½ light-years distant. Another relatively close star is Sirius, the bright star of the winter skies, distant 9 light-years. This investigation places Arcturus and Polaris, stars used a great deal by surveyors, at distances of 41 and 466 light-years respectively, whilst the double star Beta Cygni, at the foot of the Northern Cross, is nearly 1,100 light years distant. Moreover, it is found that the stars do not extend to equal distances in all directions; they extend to much greater distances in the direction of the Milky Way than they do at right angles to that plane. The stellar universe is thus not spherical but rather disc-like in form with the long diameter about ten times the shorter.

Value of Researches.

The main value of such researches is in this determination of the form and structure of the universe—the problem towards the solution of which practically all astronomical investigation tends. When results for the distances of the stars had to be based upon triangulation methods alone we could reach out to a limited distance only. The base line of 186,000,000 miles, enormous as it is relative to earthly standards, is, nevertheless, inadequate for all but the nearer stars and necessity drove astronomers to seek some other method of attacking the problem. The newer method adopted at and enlarged upon at Victoria has the decided advantage that it is usable no matter how infinitely remote the star may be, provided only it is bright enough for its spectrum to be secured. The great light gathering power of modern telescopes makes it possible to spectra of extremely faint stars.

A by-product of the work has been the aid rendered the physicist in his study of the atom. When the astronomer found that certain spectral lines were particularly intense in intrinsically bright stars the physicist was led to seek the reason for the same and the facts marshalled by the astronomer from the high temperature stars have aided materially in elucidating the structure of the atom.

Where Christmas of 1927 Has Been Reached Already

There is a factory in Bradford, England, where they have already reached Christmas—not Christmas 1926, but Christmas 1927.

The mystery is explained by the fact that the factory in question is devoted to the manufacture of Christmas cards. It maintains a staff of 200 or so in a constant atmosphere of peace on earth and good will to men from January 1 to December 31. The Christmas card output for the coming season was completed during midsummer when Bradford was experiencing well above 80 in the shade, and since then the factory has been at work on greetings for Christmas, 1927.

The yearly output verges on five million cards, quite an appreciable proportion of which are shipped to Canada, New Zealand and Australia.

The Better Anatomy Class.

"That medical student is more often found at the dancing class than the anatomy class, I hear."

"He says he gets better anatomy at the dance."