

"HELLO MARS!" SIGNALS TO GO FROM FORT OMAHA AND SCIENTISTS EXPECT TO GET RETURN FLASHES

Prof. Todd Will Attempt to Rise 50,000 Feet in Biggest Balloon Ever Built---Leo Stevens to Be Pilot---Expect Ascension in Near Fall

That Mars Is Inhabited Is Firmly Believed by Soundest Scientists in the World—It Is a "World a-Thirst," Says Prof. Lowell, Without Water, the Canals Being to Convey Melted Ice From the Poles—Has Little Specific Gravity and Elephants Could Spring About Like Gazelles—50,000 Feet Will Take Astronomer and Pilot Into What Is Called a "Vacuum"—They Will Have Oxygen Tanks—Great Height Will Enable Observer to Rise Above Dust Aura of Upper Atmosphere.

Astronomers and meteorologists of the whole world are tremendously interested in the balloon trip to be made 50,000 feet into the air from Fort Omaha by Prof. David Todd, the noted American astronomer, in an attempt to signal to the planet Mars.

Notable experiments and explorations of the upper air from balloons have been made by the United States Weather Bureau. July 30, 1913, it sent up from Avalon, Catalina Island, balloons with recording instruments which reached the enormous and American record-breaking height of 32,643 meters, or 203 miles. It was also at the famous Lowell observatory at Flagstaff, Ariz., that the late Prof. Percival Lowell spent more than 10 years studying the planet Mars, reaching his famous and much-debated conclusions that Mars is inhabited, that the intelligent beings there are fighting for life, as their planet is a desert plain without oceans or other natural water bodies, all of which have evaporated.

"A World a-Thirst." The inhabitants of Mars, which Prof. Lowell calls "a world a-thirst," have, therefore, the astronomer Lowell declared, constructed a huge network of waterways or canals, connecting the centers of population north and south, with the polar caps, to get the melting snows to furnish the necessary water to crops and vegetables and stave off the final drying up of the planet. Visiting astronomers to Mt. Wilson observatory, Pasadena, have also taken photographs there of Mars from the 60-inch telescope, and as soon as the new 100-inch telescope on Mt. Wilson is completely assembled and in working order it is expected that other specialists on Mars will visit there and take other photographs and observations. This is the largest and best equipped astronomical laboratory in the world.

The staff of the observatory itself, though interested in all forms of astronomical research, are primarily concerned with studying the composition of the sun, and to the scientific world the Lowell observatory at Flagstaff has been considered the foremost Mars laboratory for the study of the most interesting of the world's planet neighbors. For, though Mars is 35,000,000 miles away at its nearest point, it has always possessed a great interest for astronomers, first, because the seasonal changes on Mars are not unlike those on the earth; second, because the planet, though one-fourth the size, is much older than the earth, and, says Prof. Lowell, "the struggle for existence in the Ma's decrepitude and decay would tend to evolve intelligence to cope with circumstances growing momentarily more and more adverse here."

Biggest Balloon in World. Professor Todd's great attempt to communicate with Mars will take place this fall, according to the announcement made by A. Leo Stevens, United States balloon instructor at Fort Omaha. The balloon will be the largest ever made, and will be piloted by Mr. Stevens, who is one of the pioneer balloonists of the country. Mr. Stevens says the balloon will be divided into two compartments, the upper one containing hydrogen gas and the lower one air. Professor Todd, who has visited all parts of the world in order to study Mars under the best possible conditions, has, Mr. Stevens says, constructed a special signalling apparatus to use in his efforts to talk to Mars.

To Penetrate Vacuum. The experiment of Professor Todd is extremely interesting, as Professor Todd is an astronomer of standing in Fort Omaha. He reaches a height of 50,000 feet he will be the first person to have gone that far into the upper air, though Dr. Berton reached a height of six and one-half miles (34,320 feet), and we have an airplane record of 30,500 feet made on January 2 last, at Dayton.

Professor Todd at 50,000 feet should experience a temperature of 55 degrees below zero. It is perfectly possible to stand this, however, in a balloon, with heating foods, etc. The air, of course grows thinner as we go upward, so that at the height the balloons reached of 20 1/2 miles, there was recorded a thinness of air which might be called a vacuum. At a height of 50,000 feet, Professor Todd, as he of course knows and has planned, will need tanks of oxygen in order that he may breathe for any length of time.

Above Dust and Clouds. The experiment will be awaited with interest, and by making it Prof. Todd doubtless desires to escape the dust particles existing in the lower air; also reaching a region free of clouds and from radiation. These advantages, it must be remarked, are relatively of little importance compared to the limited facilities a balloon would afford for actual work of signalling. It would seem, all things considered, more

practical to erect on the surface of the earth, where the air is free from moisture and dust some sort of signalling apparatus of gigantic proportions. The public interest attending Prof. Todd's experiment will have a beneficial effect in that it will direct widespread attention to other worlds than ours.

What may the scientific world reasonably expect to result from the balloon trip of Prof. Todd? In the first place, the experiment indicates that Prof. Todd believes that there must be some foundation of truth for Dr. Lowell's long-cherished belief that Mars was (and is) inhabited.

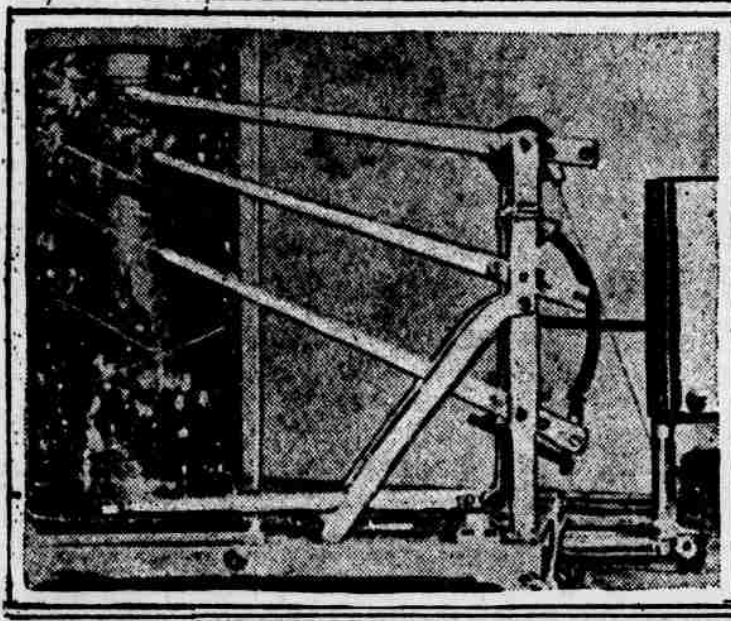
"Hello, Mars." Assuming the Martians, as Prof. Lowell did, to be more intelligent than the people of the earth, they would at once recognize regular and intelligently produced flashes as an attempt to say "Hello, Mars," and it is hoped, by astronomers, that Mars will, with return flashes, likewise signal "Hello, Earth." If such flashes do come, they will be automatically received and observed at the Flagstaff (Ariz.) observatory, where Mars is always under observation and every change there registered and noted.

Prof. Lowell stated in lectures and books that the inhabitants of Mars were well worth knowing, because they are older, planetarily

go for the latest information concerning Mars, with which Prof. Todd desires to make the first signalling effort ever made from the earth to communicate with a planet, and to do which he will reach a point above the earth farther than man has gone up to this time.

Based entirely on the facts he says he learned as the result of many years' study of Mars, Prof. Lowell gives a picture of life as it must be on that dying planet. The gravity there being three-eighths of the earth, load would weigh no more than a stone on the earth; falling bodies would sink with graceful motion. Denizens of Mars, says Prof. Lowell, would be accustomed to this air, and, in fact, having known nothing else, would be able to get along very well, and perform feats of canal digging for instance, which would be considered marvelous by earth dwellers.

On the physical makeup of Mars, itself, as presented by Prof. Lowell, the picture is a bleak one. He calls it a world-wide desert, a flat plain, all land, where fertile spots are the exception, and where water is everywhere scarce. He calls it a "world a-thirst," where water is the one thing needed. But nature gives forth, so says Prof. Lowell, "one line of salvation to it (Mars) and that lies in the periodic unlocking



Meteorograph which rose to a height of 94,716 feet from Avalon, Catalina Island.

speaking, than we are, and, if one may carry out Prof. Lowell's conclusions, the inhabitants of Mars will certainly cry out for water when they signal back to the earth, for Mars is a desert, Prof. Lowell contended, and is slowly but surely drying up to the point where life will eventually be extinct—a fate, incidentally, which scientists also predict for the earth and other planets not already dead.

Previous Reported Flashes. Speaking from the standpoint of an astronomer, Mars A. Baumgardt, in charge of the astronomical observatory of W. A. Clarke, Jr., said: "I have read with interest of Prof. Todd's balloon experiment, and I judge that he intends to attempt to signal Mars by means of mirrors. Several years ago there was a report that signals or flashes had been received from Mars. Doubting that such flashes had been actually seen, it was later generally believed that the flashes might have come from the reflections on large seas of ice or snow at the polar caps of Mars. I do not believe that Prof. Todd intends to try to do any actual telescopic studying of Mars, because he would gain nothing for his purpose by going 50,000 feet nearer Mars than the earth, and also, the instability of a swaying balloon would make any telescopic work impossible. A telescope such as Mr. Clarke's six-inch glass on West Adams street was placed on an iron framework which rests on a concrete base deep in the ground, and no part of the frame touches the building on which it stands. The rumbling of wagons or cars on West Adams street would affect the stability of the telescope were it not so placed, so one may see from this that a moving balloon is impossible for any but signalling purposes."

Astronomer's Interested. Those who decline to follow the conclusions of Prof. Lowell that his long observations of Mars proved the existence of intelligent life there, admit, however, that the discoveries at Flagstaff aroused a lively interest among astronomers as to what is taking place on Mars, that interest taking its latest form in the balloon trip of Prof. Todd.

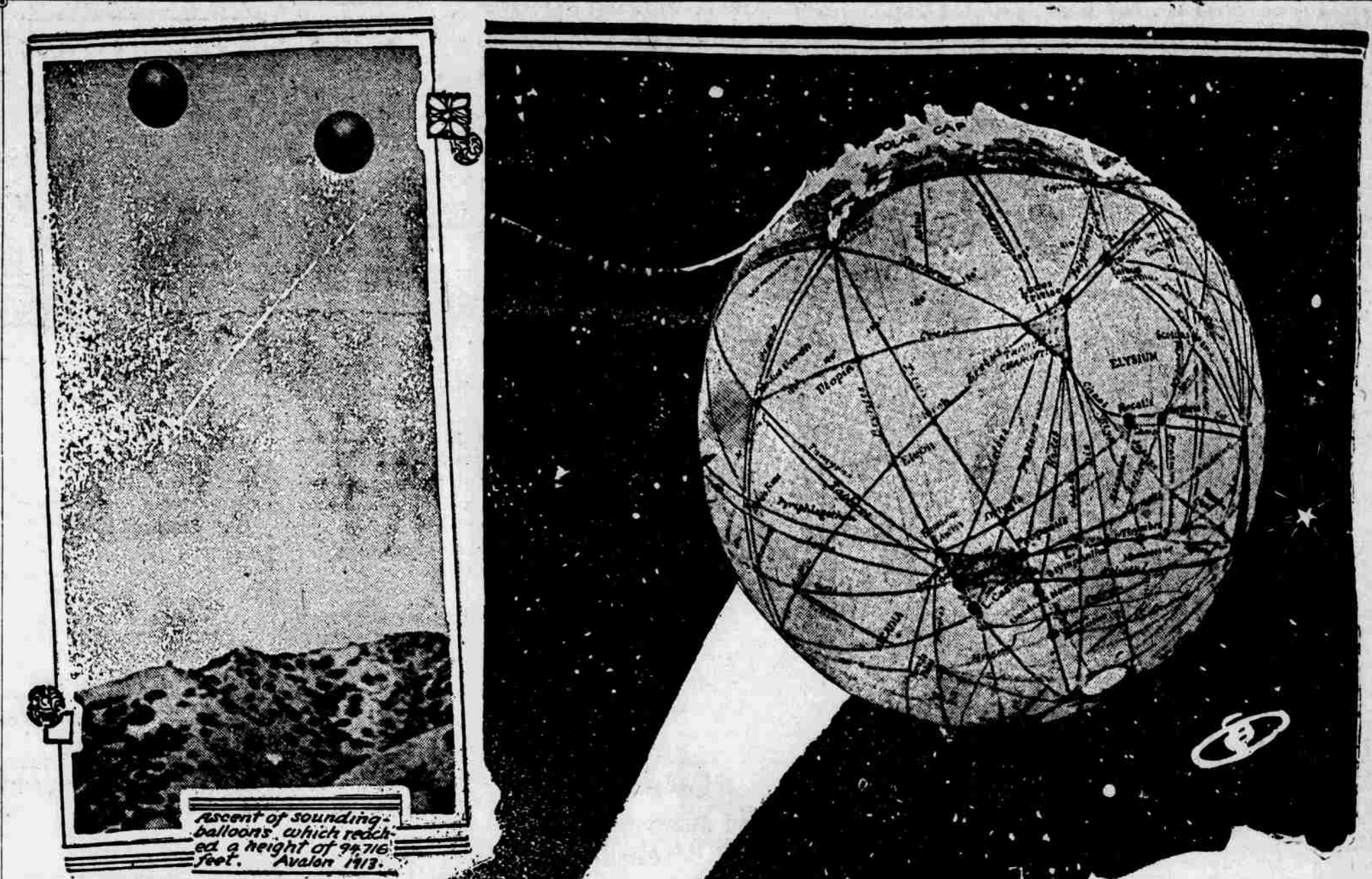
The Encyclopedia Britannica declares that, apart from the soundness or unsoundness of his conclusions, the work of Prof. Lowell placed him at the head of all Mars authorities. Therefore, to the Flagstaff astronomer's views one must

recall. Thus to us it takes on an added glamor from the fact that it has not long to last. For the process that brought it to its present pass must go on to the bitter end, until the last spark of Martian life goes out. The drying up of the planet is certain to proceed until its surface can support no life at all. Slowly but surely time will snuff it out. When the last ember is extinguished the planet will roll a dead world through space, its evolutionary career forever ended."

People Worth Knowing. Prof. Lowell writes: "Thus, not only the observations we have scanned lead us to the conclusion that at this moment Mars is inhabited, but they lead us to the further one that these denizens are of an order whose acquaintance would be worth the making."

Whether we shall ever converse with them in any more instant way is a question upon which science at present has no data to decide. More important to us is the fact that they exist, made all the more interesting by their precedence of us in the path of evolution. Their presence certainly ousts us from any unique or self-centered position in the solar system, but so with the world of the Copernican system, the Ptolemaic, and the others survive this cosmic change. So may man. To all who have a cosmopolitan breadth of mind it cannot but be pregnant to contemplate that we have warrant for believing that such life now inhabits the planet Mars.

Last Spark of Life. "A sadder interest attaches to such existence—that is, cosmically speaking—soon to pass away. To our eventual descendants life on Mars will no longer be something to scan and interest. It will have lapsed beyond the hope of study or



Ascent of sounding balloons which reached a height of 94,716 feet. Avalon, Ariz.



J.G. Wells' idea of a Martian and his fighting machine.

of the remnant of water that each year gathers as snow and ice about the poles."

which, passing through the canals, brought vegetation along the canals of life. Prof. Lowell also discovered immense double canals and oases or junctions. Canals to the number of 585 had been charted up to 1908.

Elephants Good Jumpers. Fighting for life as the inhabitants of Mars must be, according to Professor Lowell and remembering that a ditch can be dug seven times easier on Mars than on earth, the construction of this immense network of canals was a task that could be and was accomplished. There were no mountains to dig through, and as an elephant on Mars could jump as easily as a gazelle, think of what the workers with intelligence could accomplish in their desperate fight for water! The oases are some 75 miles across, giving sufficient space for living and the means to live, and those may well be the cities of Mars.

A Sound Scientist. Prof. David Todd, who plans to make the balloon trip to study Mars, has been director of the Amesherst (Mass.) College Observatory since 1881, and has been at various times in charge of government astronomical expeditions to Tripoli, Barbary, Russia, and the Andes to study the eclipses, and was chief of the Mars expedition to the Andes in 1907. He is a member of all of the leading astronomical societies of the world, and is regarded as a sound

conservative scientist, given only to publishing his discoveries and making no unsound conclusion therefrom. Professor Percival Lowell, was a brother of President A. Lawrence Lowell of Harvard, the astronomer of which university, incidentally, never agree with Professor Lowell's conclusions about Mars. Professor Lowell always declared that he made no surmises in stating that the lines he saw on Mars were the result of intelligent construction, but the facts themselves lead to no other conclusion than that Mars was inhabited. Prof. Lowell, who was a man of independent means, endowed his observatory at Flagstaff, and his Mars works is being carried on there by Dr. V. M. Slipher and other scientists who were Professor Lowell's associates.

Finds Two-Headed Snake. Waynesboro, Pa., Oct. 18.—A baby snake with two separate and distinct heads was found by S. E. Fitz, a local fisherman. The heads are divided at the neck and each is thoroughly equipped to function as a head—tongue, fangs, eyes and all. Fitz made the discovery following a battle with a mother snake. He was wading in Conocheque creek when the old reptile attacked him, with head uplifted and hissing like escaping steam. Fitz killed the snake and took it to the bank, where, after dissecting it, he discovered the freak.

Weight of Auto of Future Is Problem for Builders. Upkeep of Car Depends on its Weight and the Materials Which Are Used in its Construction; Cost of Operation Is the Main Issue.

Weight of Auto of Future Is Problem for Builders

Upkeep of Car Depends on its Weight and the Materials Which Are Used in its Construction; Cost of Operation Is the Main Issue.

By H. A. TARANTOUS.

Unquestionably, the most serious problem that has confronted engineers since the beginning of the automobile industry has been to so design a car as to make it economical. Upkeep has been a retarding influence even in the purchasing of cars, for the initial cost is hardly ever given so serious consideration as upkeep. There are three factors of automobile upkeep which interest the engineer and user alike. These are: Tires, gasoline and repairs. These three fundamental controls of the cost of keeping a car running are reduced almost in the same proportion as the car is scientifically reduced in weight. At the same time that this all-important upkeep is reduced by lightweight construction there comes of necessity a simplification of the chassis and easier handling.

The car of the future will be a better riding car, a lighter car, a better performer, and paradoxical as it may seem, a larger car than the present one.

To Weigh Less.

The light weight construction, which is inevitable in the future car, and which already is being used on a number of present models, may be obtained in numerous ways, all of which go to produce a vehicle which will show: 1. Lower operating cost. The average cost should not exceed rail travel. 2. Lower consumption of fuel. The average car should give 30 miles per gallon. 3. Less tire wear. The average tire should give at least 20,000 miles service. 4. Better performance.

All of these results may be accomplished for the benefit of the car owner, the manufacturer, the roads and the country as a whole, through the proper use of the correct materials, the proper proportioning of the weight of the car, proper design so that lighter materials may be used. That this may be done to produce a superior vehicle has already been shown, since there are a few cars on the market which exhibit practically all the characteristics mentioned. In going over these cars and in studying the subject of lightweight vehicles one will find that there is a greater use of alloy steels, aluminum and pressed steel to supplant the heavier metals such as carbon steels, parts of larger sections cast iron, etc. In other words, if an iron part weighing 50 pounds can be discarded for a pressed steel part weighing one-third as much and doing the same or better work there seems no logical reason why the latter should not be used. At the same time that a change of metal is considered the subject of cost comes up. In some cases an actual saving may be made by the substitution, but in others it means an increase in cost. However, the point to be carried in mind is that the initial increase in cost usually is slight compared with the aggregate savings due to the accomplishments of the lightweight vehicle.

More Wood Used.

A short time ago it was suggested by one engineer that the body could be made of plywood and the frame

and axles could be made of wood. While the plywood idea is new and no doubt will be taken up, the use of wood for frames and axles is far from new. The single cylinder Brush runabout used a wooden axle. Franklin even now continues to use a wooden frame. The point is that he has been adhering too closely to convention instead of carrying the light weight idea to some logical end. Especially have axles been neglected and weight reduction here is a most important matter. At the present time, there are some extremely good cars on the market—good in every respect except that they "eat" tires and gasoline. This is due to the carrying around of too much "dead" weight (weight which is useless). The hard riding, which many cars exhibit with much so-called rebound is due in greater measure to the heavy rear axle and the lack of appreciation by the engineer of the proper ratio needed between the spring weight and the unsprung weight (weight below the springs).

Better Hill Climber.

There is another very important result which light weight brings about. We all know that it requires more effort to move a light mass than it does to move a light one. The lighter mass (the lightweight car) will then accelerate better, it will climb hills better, it will show a higher maximum speed on the road. These are truths which every engineer and many light-car owners appreciate.

The serious consideration of design toward a reduction in weight, the use of lighter materials will unquestionably bring the weight of the average touring car of the future down some 500 pounds. In the larger, more expensive cars the weight reduction may be greater than 1,000 pounds. Even our so-called lightweight cars of today will be far lighter.

Skeletons Unearthed on Massachusetts Beaches

By International News Service. Gloucester, Mass., Oct. 18.—Two skeletons have been unearthed on the beaches here. One skeleton, apparently that of a young woman, was found at Wigershook beach. Another skeleton, that of a man, was found on the same shore by two boys.

Pieces of wood, in which long nails had been driven, were found around the skeletons, as if the bodies were originally in a box. Nothing to identify the skeletons was found.

Death Punishment Resumed for Murder in Missouri

By International News Service. Jefferson City, Mo., Oct. 18.—After having been abolished for practically two years, death punishment is again in vogue in Missouri. At the last session of the legislature a bill restoring capital punishment for murder was passed.

Despite much agitation against the passage of the bill, it was passed by the solons, who believed it would aid in the prevention of crime.