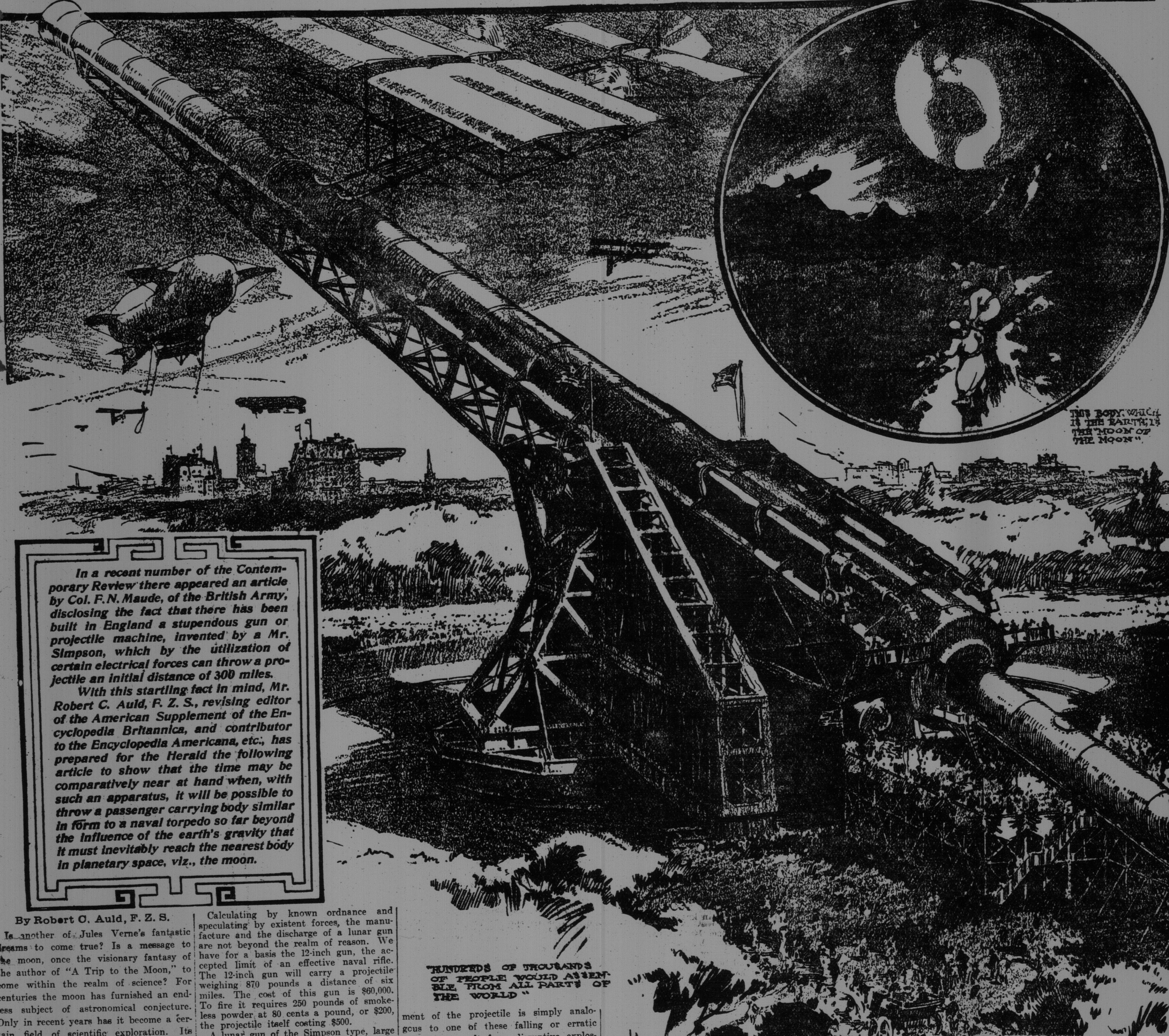


ALL ABCARD FOR THE MOON!



THE CONQUEST
OF THE AIR
IS ASSURED
NOW FOR
INTER-
PLANETARY
SPACE

In a recent number of the *Contemporary Review* there appeared an article by Col. F.N. Maude, of the British Army, disclosing the fact that there has been built in England a stupendous gun or projectile machine, invented by a Mr. Simpson, which by the utilization of certain electrical forces can throw a projectile an initial distance of 300 miles.

With this startling fact in mind, Mr. Robert C. Auld, F. Z. S., revising editor of the *American Supplement of the Encyclopedia Britannica*, and contributor to the *Encyclopedia Americana*, etc., has prepared for the *Herald* the following article to show that the time may be comparatively near at hand when, with such an apparatus, it will be possible to throw a passenger-carrying body similar in form to a naval torpedo so far beyond the influence of the earth's gravity that it must inevitably reach the nearest body in planetary space, viz., the moon.

By Robert C. Auld, F. Z. S.

Is another of Jules Verne's fantastic dreams to come true? In a message to the moon, once the vision of science, for centuries the moon has furnished an endless subject of astronomical conjecture. Only in recent years has it become a certain field of scientific exploration. Its volcanic cones and craters, its dead river beds and verdurous mountains have all come within accurate geodetic survey. It is only the intervening 239,000 miles of ether that separates it from the world that staggers the imagination of the scientist and layman alike, but if the claims of a London inventor, A. S. Simpson, are true, even that vast space may be traversed with assurance and safety. Mr. Simpson has invented an electrical gun which he asserts will carry a projectile of 2,000 pounds at the rate of 30,000 feet a second for three hundred miles. The actual test has not been made, but military authorities have endorsed the plans, and scientists may rejoice.

A gun with the propulsive power of the Simpson invention, having the muzzle velocity claimed for it, overcomes the chief hindrance to mortal invasion of the moon. Hitherto the problem that has perplexed scientists has been to penetrate the zone of gravity that encompasses the earth for a distance of some two hundred and fifty miles. Once outside this atmospheric realm of gravity and air pressure the problem of reaching the moon, according to scientists, becomes less speculative than in Jules Verne's time. It is well known that the celebrated romancer of science founded his stories on actual knowledge of the period in which he lived. Scientific progress in the last fifty years has been great, but it sustains the French author's idea that the only feasible way of sending a message to the moon is by firing a projectile from a huge gun.

Jules Verne used 40,000 pounds of nitroglycerine to explode his charge, the concussion being so great that 5,000,000 people who saw it fired were hurled to the ground. Electricity has altered the face and the character of the earth since then, so that the dangers of concussion may be eliminated.

Jules Verne's gun was mythical; there was no propulsive power known at that time to science that would project a missile beyond the zone of the earth's gravity. Only recently Professor Ernest Crane Dodge, A. M., has stated that "a body relieved of gravity would reach the moon in ten days."

How much faster would a projectile from an enlarged Simpson gun, a veritable lunar cannon, accomplish the trip from the earth in the direction of the moon?

A lunar cannon based on the Simpson plan could easily hurl a projectile beyond the zone of the earth's gravity. Through the unknown vacuum, ether and air currents, the projectile, which in its lunar course would be controlled by propulsive power, would be an airtight chamber of the nature suggested by Jules Verne. The novelist had no actual parallel for his invention. Today we have its counterpart in the submarine boat, in such a car, equipped with every modern device of science for maintaining life, at least five scientists could make the trip in comfort and safety. The possibility of the moon's gravity is a subject of interest to the scientists might earth would not doubt have undertaken most in polar and interest of the world's

Calculating by known ordinance and speculating by existent forces, the manufacture and the discharge of a lunar gun are not beyond the realm of reason. We have for a while the 12-inch gun, the accepted limit of an effective naval rifle. The 12-inch gun will carry a projectile weighing 870 pounds a distance of six miles. The cost of this gun is \$90,000. To fire it requires 250 pounds of smokeless powder at 80 cents a pound, or \$200, the projectile itself costing \$800.

A lunar gun of the Simpson type, large enough to hurl a projectile through the zone of gravity, would need to be three times as large as the 12-inch gun. The amount of steel required in its manufacture would be greater than that used in the largest battleship in the world, and would be equal to that used in the Metropolitan Life Building, in Madison square, New York. In fact, the lunar gun required would be about the size of the Metropolitan Building, which is more than two hundred feet square and seven hundred feet high. The gun would cost \$2,000,000 a paltry sum in these days to devote to such an experiment. The cost of firing the lunar gun would not be great, in consideration, if smokeless powder were used, would not exceed the cost of eight volley broadsides of the entire ordinance of 1,011 guns of Admiral Exmouth's fleet, being estimated at \$50,000, making the expenditure for the single charge of the lunar gun \$400,000. If smokeless powder were used, which, however, is not anticipated, as will be seen later.

The recoil of a 50-ton gun would lift the Lusitania out of the water, which would render the discharge by explosion of the lunar cannon of the size described almost impossible, but assuming the recoil of the electrical explosive power suggested by the Simpson gun, that knotty feature of the problem is eliminated. The explosive power is figured out that the recoil is so distributed and confined that it imparts the full force of the carrying power to the projectile, and therein must lie the secret of the possibility of a lunar gun that will hurl a huge projectile out of the earth's gravity.

The direction of the projectile once successfully launched is a vital element to control. In projecting a missile to hit an objective point on earth, the parabolic curve must be calculated, but in fixing the moon as a target the missile would be fired continuously in direct diametrical line away from the diametrical line of the earth.

Where there is no atmosphere there is a vacuum as far as air is concerned, but not in so far as ether is concerned. But where there is a vacuum gravity at such a distance from earth loses its place. But a distance from earth and gravity is one thing and gravitation is another. Gravitation is universal. It is a mysterious, unknown force, that steers the stars in space in their course, moving them through the ambient ether at the slow rate of twenty miles a second. The projectile once beyond the earth's gravity, how would it act? What analogy in nature have we for supposing that such a body so intruded in an orderly manner in an orderly manner in its course? Will the projectile sink or move through this ethereal jelly ocean without obstruction, while the earth, moon and stars are rushing through the ether at a hundred thousand feet per second?

Gravitation is a thing not of earth, but really of ether itself. Gravitation depends on mass and motion, which would render the projectile actually under control by the laws of nature. The move-

HUNDREDS OF THOUSANDS OF PEOPLE WOULD ASSEMBLE FROM ALL PARTS OF THE WORLD

ment of the projectile is simply analogous to one of these falling or erratic stars that result from disruptive explosion and which become visible only when being set on fire as they strike the friction element of the atmosphere of earth in falling.

Ether's movement is directed in straight lines towards the spheres, so anything projected into it would swing into such lines of direction and would scour out its crumpled in such paths unless controlled by inward energy.

With a propulsive or regenerative energy imparted to the projectile, it can ward its way through the thinner ether for an indefinite space, the resistance being lightened. It will proceed under electrical control until it approaches the realm of the moon, where gravity is much less than the earth, its gravity weight, or mass, being one-sixth less. Reaching the moon, its energy exhausted, it would fall gently on peak or valley without creating much of a jar or jolt.

It is assumed in relation to the movement of the projectile that outside of the sphere of earth's gravity it would be controlled and held in its course by a rudder and screw, which would be propelled by the electric energy of its dynamo. This involves a new problem in electric transmission, a problem already in the way of solution. Experiments are in progress, which suggest the probability of creating enormous electrical waves, generated by the force of Niagara. It is the dream of the inventor to employ these wireless waves in supplying electric current at vast distances by merely tapping the wave currents. By means of a huge Marconi transmitter installed at Niagara, electrical energy from which is already carried by thousands of miles with success in telegraphy, the projectile's dynamo could easily draw the necessary current or propulsive power to direct its course through ether, which of itself is a non-resistant to electrical energy.

When the truth, accidentally revealed and experimentally confirmed, says Nikola Tesla, in referring to the principle of electric waves, "is finally realized, this planet, with all its appealing immensity as to electric currents, is virtually no more than a small metal ball, there will be no such thing as distance to disturb our peace of mind."

The actual time required for passage of the projectile from the earth to the moon is conjectural, but it would surely be less than ten days, which is the time asserted by Professor Dodge in which an uncontrolled body, released from the earth's gravity, would be able to cover the distance.

To reach the moon, then, on the basis of lunar ballistics, is merely a question for the mathematician, the electrician and the mechanical engineer. It is a matter of figures that will mark their exaltation on the tablets of Time as the old fable proceeds to greater marvels and more wisdom, which entitles us to speculate in detail according to the knowledge we already have, at least. The powers of electricity, harnessed by radiating figures that will make the propulsion of the huge 270-ton projectile silent, vibrationless, straightforward to the moon.

boat Octopus. Its length would be 100 feet and its beam 12 feet.

The cost of the projectile would be a trifle less than \$1,000,000. The weight of the projectile would be 270 tons, and it would have the complete mechanical equipment of a submarine. The tanks which are used in a submarine to govern its buoyancy would serve the same purpose in the aerial projectile, being filled with air, which would be released, according to the resistance encountered in the projectile's initial flight of 250 miles. Once hurled beyond the gravity zone of the earth it would encounter no gravity to displace its weight. A mountain or a great body of equal weight, moving in either at the same speed as the projectile, would be perfectly insulated and stored by the electric force that would "fire" the projectile, each magnetic section connected with a magnetic section inside, its final release into the first magnetic section would mark the second when the shot would occur. Thus the men in the projectile car would not be subject to destruction by the force of concussion. They would only be called upon to provide shock absorbers for the initial moment of the turning on of the current.

Heavy rubber air inflated cushions of varying resistance would be employed to take up the force of the shock, and as the speed of the projectile for some distance would increase rather than diminish there would be no rebound.

Scientists who have dwelt upon the thought of erecting a lunar gun and sending a projectile car to the moon have suggested that central Park would be an ideal spot for the construction of such a great enterprise.

Let us then imagine the completion of all the mechanism for the project. The vast electrical energy of Niagara Falls, or the entire plant of the subway, elevated and surface roads, some 200,000 horse power, would be turned into the coil of the lunar gun. The projectile car would be hoisted into the breech of the gun, to its place against the inner magazine, and astronomers and scientists from all parts of the world would form a consulting board to aim the gun so that its car in a ten days flight would land in the vicinity of the moon. Hundreds of thousands of people would be assembled from various parts of the world.

What a thrill would be experienced and what a shout would go up when the bells of the city clanged and the whistles of the factories and steamers shrieked at the rocket signal that the current of a hundred million volts had been turned into the magnets of the lunar gun.

The flight of the projectile through the air would be so swift that at first the eyes could not follow it, then as it swam off gracefully through space the eyes of every man, woman and child of the earth would seek to follow it, for through speculation it would be possible to watch the progress of the projectile car. The great telescopes erected upon the highest peaks of the Andes and the Himalayas

would follow the course of the projectile as it sped in its pathway through the attenuated, jellylike sea of ether, and all the time the wireless stations at Glace Bay, on the Eiffel Tower and at various points of the earth would be giving back the message to man of his triumph over space and perhaps the secret of the universe.

If Professor Dodge is to be believed, the daring scientists, upon reaching the surface of the moon, would not go to their doors but to a new existence, whence they could communicate with the earth and perhaps arrange subsequent trips, divested of even the dangers they encountered.

"Men could abide on the moon for a time," says Professor Dodge, "in thick walls, airtight houses, and could walk out of doors in airtight divers' suits. Scientists would find in the wastes a fresh field for exploration. Astronomers could plant their telescopes there, free from their most serious hindrance, the earth's atmosphere. Tourists of the wealthy and adventurous class would not fail to visit the satellite, and it is probable there are veins of precious metals, beds of diamonds and an abundance of sulphur in a world of so highly volcanic a character."

"Let us suppose we arrive on these savage volcanic steeps of the moon about the middle of the day," says the celebrated French astronomer, Camille Flammarion, "from the black horizon shoot rapid arrows of solar light, which strike the summits of the moon mountains, while the plains and valleys remain in darkness. The light increases slowly. While with us in the central latitudes the sun takes but two minutes and a quarter to rise, on the moon it takes nearly an hour, and consequently the light which it sends is very feeble for several minutes and only increases with extreme slowness."

"The inhabitants of the lower hemisphere turned toward our earth admire in their sky a brilliant body, having a diameter about four times greater than that of the moon seen from our globe, and with a surface fourteen times larger. This body, which is the earth, is the moon of the moon."

"It seems almost motionless in the sky. The inhabitants of the centre of the visible hemisphere see it almost constantly in their zenith. Its light diminishes with the distance of the country from this central point, up to the limit of this hemisphere, where they see our world placed like an enormous disk on the mountains. Beyond that they see us no more."

"The scientists of the moon have probably proved in the most categorical manner to the ignorant who surround them, that the earth, not being habitable, should not be inhabited, and that it is made solely to serve as a clock to the moon and to shine during the night."

Alluring speculations that must come day, if man ever accomplishes the long dreamed of trip to the moon, be brought into the realm of exact science and not on the pages of astronomical lore!

"It's so ridiculous," said Cholly, "to say that 'clothes make the man.' 'Indeed!' remarked Miss Wins. 'You see, if a fellow like me didn't have such lots of clothes he wouldn't need a man.'—Pittsburgh Press.

"No drugs, plenty of rest and simple food." That is the prescription which Sir Wilfrid Laurier says eminent physicians gave him five years ago. To this wholesome advice he attributes the fact that he is still capable of hard work.

A large swarm of bees has moved into the Peterboro (N. H.), Masonic hall, going in and out around in "window casings." They can be seen working almost every day.

KING AND QUEEN AT AMERICAN GIRL'S WEDDING

London, June 23.—In the presence of King Edward, Queen Alexandra, and a brilliant gathering of royal and distinguished personages, Miss Jean Reid, daughter of the American ambassador and Mrs. Whitelaw Reid, was united in marriage today in the Chapel Royal, St. James' palace, to Hon. John Hubert Ward, a brother of the Earl of Dudley. The Bishop of London, assisted by the Rev. Dr. William M. Grosvenor of New York, performed the ceremony.

Enormous crowds outside watched the arrival of the bride, bridegroom, and wedding guests. As the King and Queen entered the chapel, the organ broke into the strains of Elgar's "Imperial Wedding March," their Majesties bowing right and left as they proceeded up the nave to their places.

Yesterday their wedding presents were put on exhibition in Dorchester house, Mr. Reid's London residence. All who saw them agree that they made one of the very finest displays of the kind ever seen in London. There was not room for all in the great drawing-rooms. They overflowed into other rooms, and in addition to those previously described, new gifts kept arriving every minute during the day. The total value of the presents shown was roughly estimated at between \$400,000 and \$500,000.

Most magnificent of all in the bewildering-dazzling mass of jewelry of every description, was the diamond crown, given by Mrs. Whitelaw Reid. It is made of diamonds of the purest water, some being of great size and brilliancy. It is so flexible it can be wound round a finger.

But in beauty of design and effectiveness, nothing excited more admiration than Mrs. Oden Mills' emerald and diamond corsage ornament and Andrew Carnegie's diamond pendant.

A striking feature was the vast quantity of extremely valuable and beautiful old silver of every conceivable kind. They were given to the bride by her father, Mr. Reid, and her mother, Mrs. Reid, and her brothers and sisters.

Both were in the house while the gifts were being shown.

In addition to the gifts to Mr. Ward, Mrs. Reid gave him a 40-horse power automobile.

A Sure Cure. (Toronto News.) "No drugs, plenty of rest and simple food." That is the prescription which Sir Wilfrid Laurier says eminent physicians gave him five years ago. To this wholesome advice he attributes the fact that he is still capable of hard work.