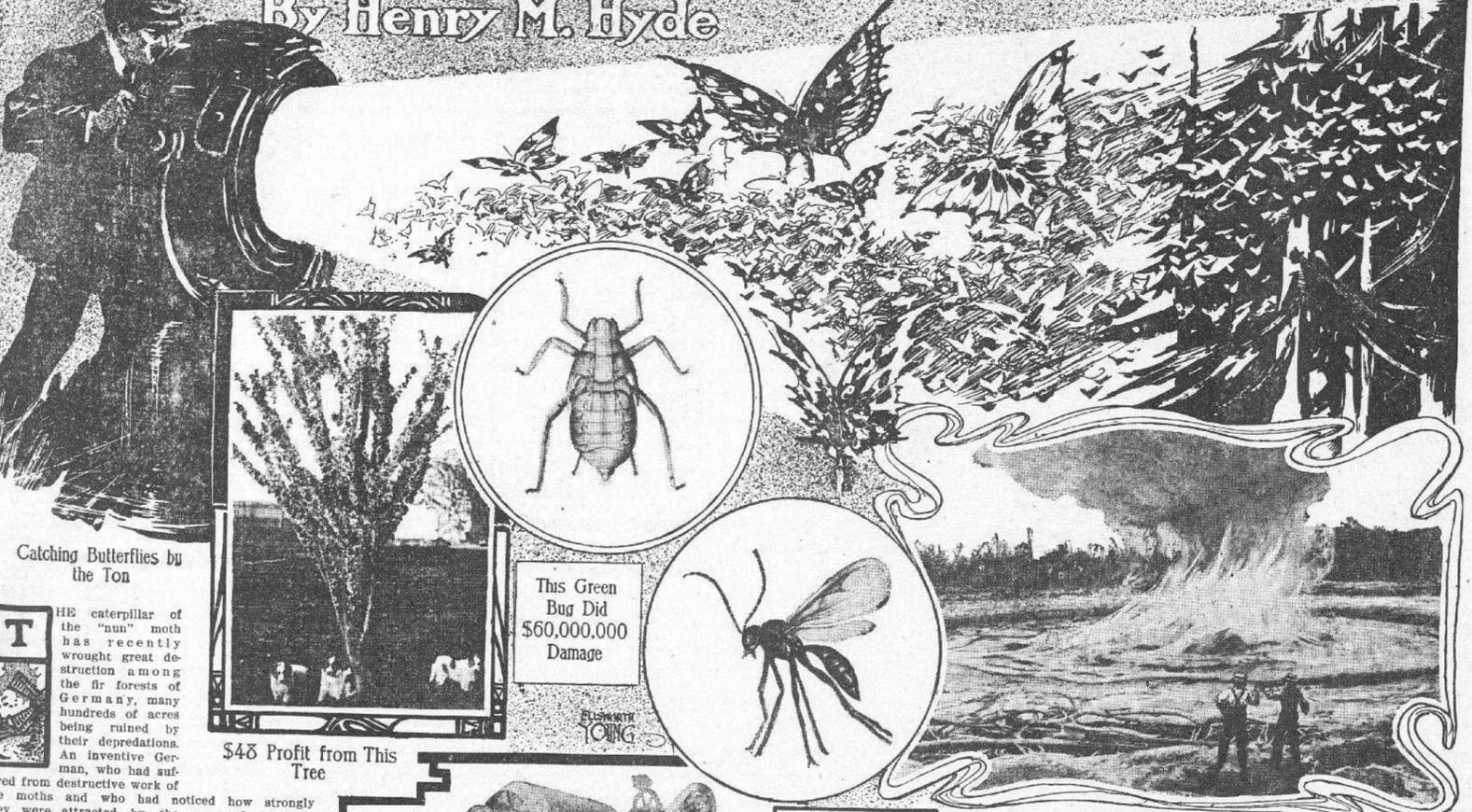


NEW WONDERS OF MEN AND NATURE

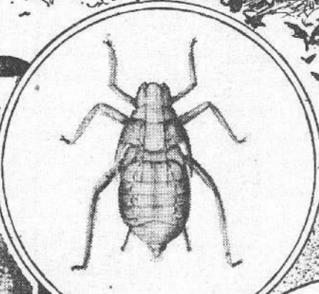
By Henry M. Hyde



Catching Butterflies by the Ton



\$48 Profit from This Tree

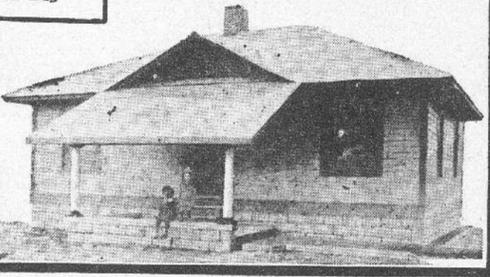


This Green Bug Did \$60,000,000 Damage

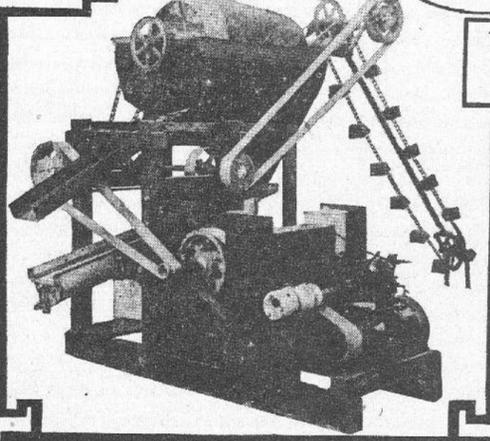


This Tiny Wasp Destroys the Green Bug

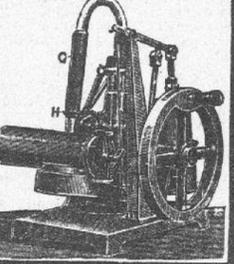
Wasting Gas Enough to Run All New York



House Built in One Day



Will Turn Deserts Into Gold Mines



Cheap Ice Maker for Every Kitchen

Caddo gas and oil fields near Shreveport, La.—gas enough to furnish light, heat and power for all the homes and great business enterprises of Chicago, St. Louis and New Orleans. The illustration shows the largest well in this field. Its crater covers an area of two acres and the gas rushes up from the depths of the earth in such force and volume, that it has been found utterly impossible to control it. For months the gas has been burning, the flames leaping more than a hundred feet in the air. Sometimes when the pressure is at its greatest, birds flying over at a great height are killed by the rising fumes and on several occasions the glow in the sky has been visible from a distance of 50 miles. There is said to be a standing offer of \$15,000 for any one who can successfully put a cap on this well.

The bottom cut illustrates a newly invented English ice machine. It is worked by hand and requires so little power that a child can easily operate it. The machine is sold at retail for less than \$50, and in little more than half an hour sufficient ice can be frozen to serve the purposes of the average family. Once people realize the danger they are running in using ice cut from ponds and lakes, which are often full of disease contamination, the household ice machine will doubtless prove popular. (Copyright, 1920, by Joseph B. Bowles.)

THE caterpillar of the "nun" moth has recently wrought great destruction among the fir forests of Germany, many hundreds of acres being ruined by their depredations. An inventive German, who had suffered from destructive work of the moths and who had noticed how strongly they were attracted by the rays of an electric arc light, recently devised a spectacular method of capturing and killing the pests on a wholesale scale. On the tower of the city hall in Zittau, Saxony, which city is entirely surrounded by great fir forests, he set up an electric searchlight of great candle power. Immediately below the light he installed a suction fan. Then, on a dark night, he turned the searchlight into the depths of the forest. Out of the thick woods came hundreds of thousands of the destructive moths, flying in an unbroken procession along the path of light which led them to the top of the city hall tower. There, as they approached closely to the source of illumination, they were caught by the suction fan and drawn in to destruction. On one occasion more than 400,000 "nun" moths were thus destroyed in an evening. The same ingenious process is to be adopted wherever forests or orchards are greatly damaged by night-flying insects.

FROM the irrigated lands of the great northwest come stories of profit from a single acre of land, which may well make the average owner of gold mine stock envious. More than once the annual crop of apples from an irrigated orchard has averaged above \$1,000 an acre. Pears have netted double this amount. Cherries grown on such trees as the one shown above bring, in good years, \$1,200 an acre. Last May, A. C. Carter, living near Spokane, sold cherries from a single tree, such as is pictured, for \$48. E. V. Martin of Wenatchee, sold 2,800 boxes of tomatoes from one acre, making a net profit of \$700. Though it takes hard work, good judgment and good luck to get a thousand dollars an acre from a single season's crop, people everywhere should be interested in the fact that by modern, intensive methods of farming, more money can be made from a suburban lot than from many an old-time quarter section.

THE tiny wasp shown enlarged in the illustration, last year saved the farmers of Kansas and the southwest something like \$60,000,000. The favorite breeding place of this wasp is the body of the microscopic green bug, which in 1906 and 1907 did terrific damage to the wheat crop in Kansas and adjacent states. Prof. S. J. Hunter of the Kansas State Agricultural college, discovered that the little wasp was the green bug's most determined and destructive enemy. He collected millions of eggs and sent them out all over the state to farmers who applied for help when the green bug pest appeared. As a result the green

bugs were practically destroyed and a full wheat crop was reaped. The year before this destruction the green bug destroyed wheat to the estimated value of \$60,000,000. THE somewhat complicated piece of machinery above is going to create a revolution in the gold mining industry. Heretofore it has been impossible to work many promising placer deposits because of the fact that no water was available. The new machine gets the gold out of mine waste, sand and gravel, without the aid of a drop of water. With it in use, dirt running as low as 50 cents a yard can be handled with a good profit. It will help to dot the dry deserts of the southwest with mining camps.

THE whims of a bride should, of course, always be respected. But when on the day before her bridal morn, a young woman of East St. Louis announced that she would not be married unless she could move directly into a brand new home of her own, the problem seemed a difficult one. Fortunately her pos-

spective husband was a man of resource. He purchased a lot over night, called in an enterprising contractor and at seven o'clock of the

wedding day the work of excavating for the new house was begun. More than 50 men of various trades toiled at high speed all day and at seven o'clock the job was entirely finished. This house contains four rooms, a bathroom, a reception hall, a front porch and a back stoop, and is certainly the only building of its pretensions which was ever built from the ground up in 24 hours.

ONE HUNDRED MILLION cubic feet of natural gas a day are going to waste in the

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Earth Beings Cannot Live in Climate of Mars

By Capt. Ellis D. Morson

NONE thing only is undisputed about the climate of Mars, and it is that if we were transported there we should instantly die. How far this incontrovertible fact is compatible with forms of intelligent life such as we know nothing of is a matter on which Prof. Lowell is not in agreement with the larger number of astronomers who have had opportunities of observing Mars. Let us, however, before inquiring where the observer of Flagstaff observatory, Arizona, differs from those astronomers whom he has called the "gifted objectors who have not seen the canals," set down points on which the larger number of astronomers are in agreement. In the first place there are distinct markings on Mars. These markings have been known for a very long time; and have been mapped by many observers since Schiaparelli, the Italian astronomer, announced certain peculiarities about them 30 years ago. A point of which Lowell makes a great deal is that these maps all coincide very closely in setting down the places where the lines on Mars appear, and in tracing the directions which these lines take. It is hardly necessary to say that the lines appear to nearly all observers as straight lines. A new question, however, now arises: The question of the trustworthiness of "seeing." If one imagines an astronomer—not very exacting about the quantity of oxygen necessary for his support—setting up a telescope on Mars to point at the earth, we shall have to allow that he would not see very much. Our dense atmosphere, with the singular watery envelope that it is suspected of possessing at great heights, would reflect

so much of the sunlight falling on us; the masses of clouds of the "wine dark seas" would add so much to the dazzling impression, that hardly in the course of a long life would the Martian astronomer be able to glimpse every part of the earth. It is otherwise with Mars. Just as it is said that every nation has the newspapers it deserves, so every planet has the atmosphere it can hold. In oxygen, in nitrogen, in hydrogen, in every gas, the particles, the molecules of the gas are ever striving to fly away into space at speeds of thousands of miles a second. The lighter the gas the greater the speed; and the only thing that keeps an atmosphere inclosing a planet is the pull which the planet's weight or gravity exerts. It is because any perceptible atmosphere at all. The planet Mars is in many ways midway in characteristics between the moon and the earth; but it resembles the moon more than the earth in its falling grip on its gases. Its atmosphere is, therefore, very thin. One consequence of this is that we see Mars very clearly. But we do not see it as clearly as we see the moon. Its atmosphere does not refract light to a very dazzling extent; and most astronomers believe that no clouds are ever seen floating on it. There are dusky veils on its disc, that cross it like flying shadows; but these are great dust-storms raised by tempests such as would eclipse the wildest tornado which ever raged on our modest planet; and there are apparitions which Lowell has identified as snowstorms such as sweep over lightness of the Martian atmosphere, "seeing Mars" has been described by an observer at Lowell's own observatory as "like looking at a Swiss landscape from a high Alp, with the summer clouds sweeping about one. Now the mist rolls away, revealing a bit of the valley, and shuts in again in a moment, while in some other spot the clouds break away and disclose a jagged summit or a portion of a shining glacier." It requires, therefore,

special astronomical aptitude both to see and to map the Martian "canals," and we need not be surprised that many astronomers criticize Lowell's estimate of the number of the canals as 426 and of the "oases" they join as 185. What are these lines and spots—are they canals? Prof. Lowell and his assistants, Mr. Lampland and Mr. Sillpher, express no doubt on the question; and up to a certain point they have very doubtfully met objection after objection to their theory. It must be understood that no responsible person now denies that there are markings on Mars. What astronomers dispute is whether these markings are as numerous as Flagstaff observatory declares, and whether they are artificial in character. We may cede their number. Are they artificial? One argument in favor of their having been made by intelligent beings is that some of the lines appear to run parallel for hundreds of miles. The reality of this appearance was doubted. Mr. Lampland has photographed Mars, and there, real beyond doubt, on some of the tiny photographs no bigger than a pea, appear now and again double canals. Then there was the question of water. Was there water on Mars at all? Mr. Sillpher has shown, by means of the spectroscope, that there is water in the Martian atmosphere. If there is water in the atmosphere then Mars may be less cold than Lowell's opponents have declared, and the atmosphere itself more dense. If that be true then there may be water in these long lines which Lowell calls canals, and these canals may have been built by reasoning beings, who thus sought to irrigate their scorched and drying planet with water flowing from the polar snows. That is the belief which Prof. Lowell once again asserts in "Mars as the Abode of Life," and he comes to his declaration with a vigor like the renewal he claims for the Martian spring. More than that, he threatens this stiff-necked generation of unbelievers. "Look at Mars," he says, "and you will see pictured the future of

your own earth, when, by the insensible flight of the gases of the atmosphere, seas, rivers and lakes alike will leave you, and nothing will remain but arid deserts and the wintry Arctic and Antarctic. Thence alone will you be able to derive moisture for the sustenance of the vegetation, which, in its turn, will sustain a more ethereal, wasted race of men; and, like the Martians, you, too, will have to build canals hundreds of thousands of miles long, employing all the resources of your engineering skill thus to keep your pallid life within you." It may be so, and in that the world may perish. But the theory is artificial, as Lowell would have us believe the canals. We cannot now examine all the objections to the superstructure of the theory; and we will only say this: That in theories of worlds as in theories of life it is inadvisable to seek other than the simplest explanations. On the surface of the earth and on the surface of the moon there has been volcanic action. On all planets, Mars included, there is a probability amounting to certainty that volcanic action has taken place or is taking place, and on Mars volcanic action would probably be more marked than on the earth. Volcanic cracks such as we know exist in the moon, though geologic time has obliterated most of them on the earth, probably exist on Mars, and the lines we see there are merely cracks in the surface, from which steam exudes and creates an annual darkening crop of vegetation in the spring time. On a smaller scale similar canals and similar growth have been noticed even in the airless moon. In the island of Hawaii there are craters which by their slow welling action furnish us with the closest parallel that is known of the forms of craters in the moon. The volcanoes of the moon were not eruptive like Etna and Vesuvius, but were pits, in which, as in the volcano at Kilauea, the lava welled up. In the moon there are long cracks, known as rills, of which one, the Ariadneus rill, is some hundreds of miles in length. In the plains about the Hawaiian volcanoes are similar cracks on a small scale, up which steam rushes.

GOOD ADVICE FOR THE YOUNG

And for the Matter of That, It is Worth Heeding by "Children of Larger Growth."

"Strike the knot," said a man one day to his son, who, tired and weary, was leaning on his ax over a log which he had been trying to cleave. Then, looking at the log, the gentleman saw how the boy had hacked and chipped all around the knot with-

out hitting it. Taking the ax, he struck a few sharp blows on the knot and split the log without difficulty. Smiling, he returned the ax to his son, saying: "Always strike the knot." That was good advice. It is as good for you as it was to the boy to whom it was first given. It is a capital maxim to follow when you are in trouble. Have you a hard sum to do at school? A burglar may not be a man or iron nerve, but he is a man of steel.

OF INTEREST TO MOTORISTS

Literary Shrines That Attract the Modern Pilgrim Who Travels in an Auto.

All manner of men and women are worshippers at literary shrines, even those of popular modern deities. Pierre Loti's house and that of Edmond Rostand are known of all winter birds of passage at Biarritz, and Americans from all the states have been known

to journey to the southeast of England expressly for the purpose of gazing at Mr. Kipling's coast-house at Burwash, at Henry James' house at Rye, or at Ellen Terry's cottage at Winchelsea. Memories of Shelley, Byron, Browning and Landor crop up every once and again in the Italian tour by road or rail, but how many who have made the entrance to Italy via the Riviera gateway have ever cast an eye on the modest little Chalet des Pins abutting on the Route d'Italie at Cap Martin, just after Monte Carlo, and before Menton is reached? Not many, doubtless. It is here that Mr. and Mrs. Williamson, the co-authors of the first and only automobile novel, have their winter rest house. How many good things in automobile fiction have been thought out and worked up here! This little corner of the Cote d'Azur has then a very welcome shrine for the literary motor pilgrim.

WANTS HER LETTER PUBLISHED

For Benefit of Women who Suffer from Female Ills

Minneapolis, Minn.—"I was a great sufferer from female troubles which caused a weakness and broken down condition of the system. I read so much of what Lydia E. Pinkham's Vegetable Compound had done for other suffering women I felt sure it would help me, and I must say it did help me wonderfully. My pains all left me, I grew stronger, and within three months I was a perfectly well woman. 'I want this letter made public to show the benefit women may derive from Lydia E. Pinkham's Vegetable Compound.'—Mrs. JOHN G. MOLDAN, 2115 Second St., North, Minneapolis, Minn.

Thousands of unsolicited and genuine testimonials like the above prove the efficiency of Lydia E. Pinkham's Vegetable Compound, which is made exclusively from roots and herbs. Women who suffer from those distressing ills peculiar to their sex should not lose sight of these facts or doubt the ability of Lydia E. Pinkham's Vegetable Compound to restore their health.

If you want special advice write to Mrs. Pinkham, at Lynn, Mass. She will treat your letters as strictly confidential. For 20 years she has been helping sick women in this way, free of charge. Don't hesitate—write at once.

WHY, OF COURSE.



"Farmer, which of those cows of yours gives the buttermilk?" "None of 'em. The goat."

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