

THE DANILEWSKY DIRIGIBLE FLYING MACHINE.

We have been favored by Dr. K. I. Danilewsky, of Charkov, Russia, with some photographs of his dirigible flying machine and notes of various experiments.

This balloon-flying machine is based on the hypothesis that if a man's strength, in proportion to his weight, is not sufficient to raise him in the air, he can raise himself if part of his weight is subtracted. By the use of a balloon filled with hydrogen the weight of the man is eliminated from the problem, and he can use all his efforts to propel and steer the balloon which supports him. Our engravings, which are made from direct photographs of the balloon in mid-air, show the relative size and form of the great wings, which are 16 feet long. In order to utilize the whole power of the wings for progressive movement, it is necessary to rise high in the air, and then the wings can be placed at 90° without any risk of descending. In the latter case, to keep the machine from descending, it is better to open the parachute. On October 8, 1897, some 25 ascents were made in an hour and a half. Other ascents were made in the spring and summer of 1898 with good success, the balloon being turned round and round repeatedly. The size of the wings was decreased to 11½ feet and the working surface was increased. At a height of 280 feet the balloon was kept immovable and was turned around in the air several times. It was found that the balloon must be inflated with fresh hydrogen every seven or eight days.

While such experiments do not solve the problem of a really practical flying machine, which can go for miles without descending and can be managed at will, still they show that inventors are on the right track, and our government has done wisely in appropriating \$25,000 for experiments on the subject under the direction of competent scientists who will guard against the wasting of money on the exploitation of freak devices.

Are Birds Affected by Eating Poisonous Food?

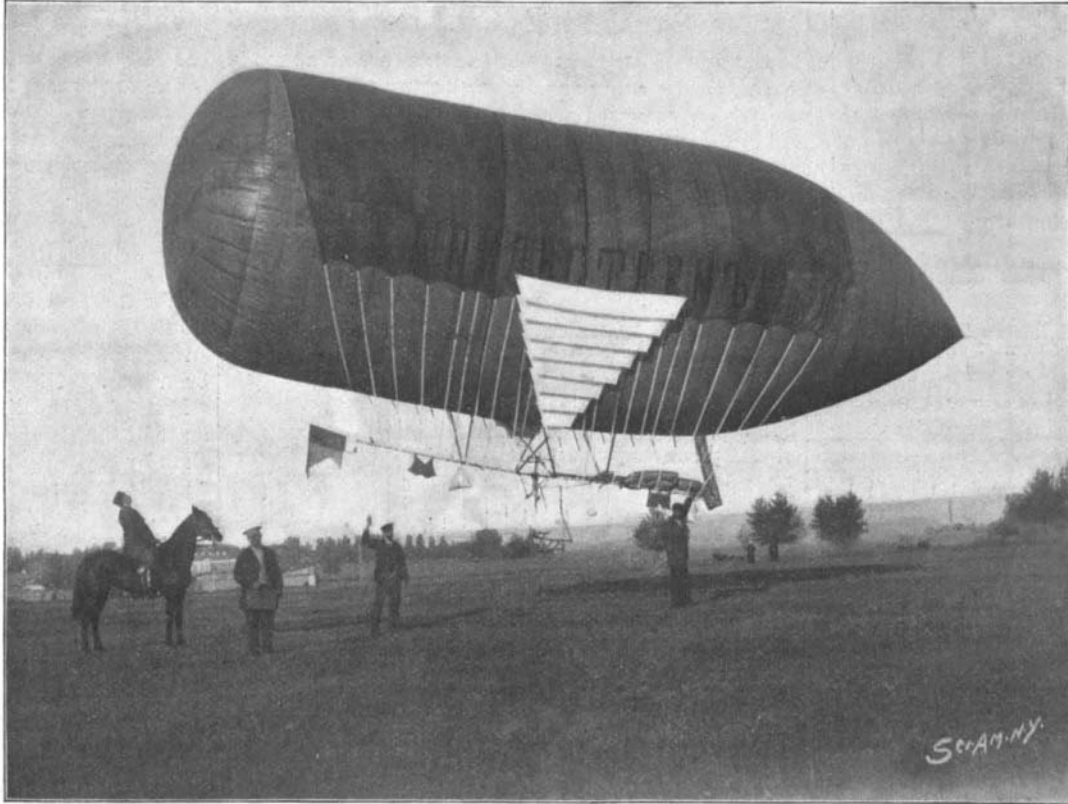
There is a great difference of opinion on this subject. While some maintain birds do not eat fruit which is poisonous, others hold they eat only the surrounding pulp, as the berries of taxus, which is perfectly harmless, whereas the seed is very poisonous. Others, again, have maintained that they do not eat sufficient to be poisoned. A recent number of Nature

grass was covered with the ejected seeds and skins of these berries, all of the pulp having disappeared, while the skins were as bright and fresh as when they were swallowed, showing they could not have passed through the alimentary canal. Each of the pellets was flat and round and about the size of a ten cent piece. The birds were constantly flying to and fro between the adjoining woods and the park. Excessive drought, by decreasing the supply of their ordinary food, was

poisonous parts of foods by birds is an interesting subject for observation and experiment. Possibly some of our readers may have noted instances of the same kind.

Education of Electric Motor Cabmen.

The use of electric carriages is greatly increasing in Paris, where they now ply regularly for hire. The company has secured a tract of land out in the country and would-be motormen are required to travel up and down this tract of land until they are proficient in the management of the electrical vehicles. The road at different places is constructed of different material, as asphalt, macadam, wood, and stone. Various obstructions are put in the way, such as baby carriages, pedestrians, bicycles, etc. These are made of thin boards and are painted to represent the various objects. They are held in place by a stay or prop, and the motorman is required to circulate around them until he becomes proficient in managing his vehicle. This is an excellent idea, and it is to be hoped the same thing will be in use here when the horseless vehicle comes into more general use. Notwithstanding the fact there are many electrical vehicles plying in the city of New York, there have been few if any accidents by them, which shows that our drivers are at least as careful as their French brethren. In the recent severe storm in New



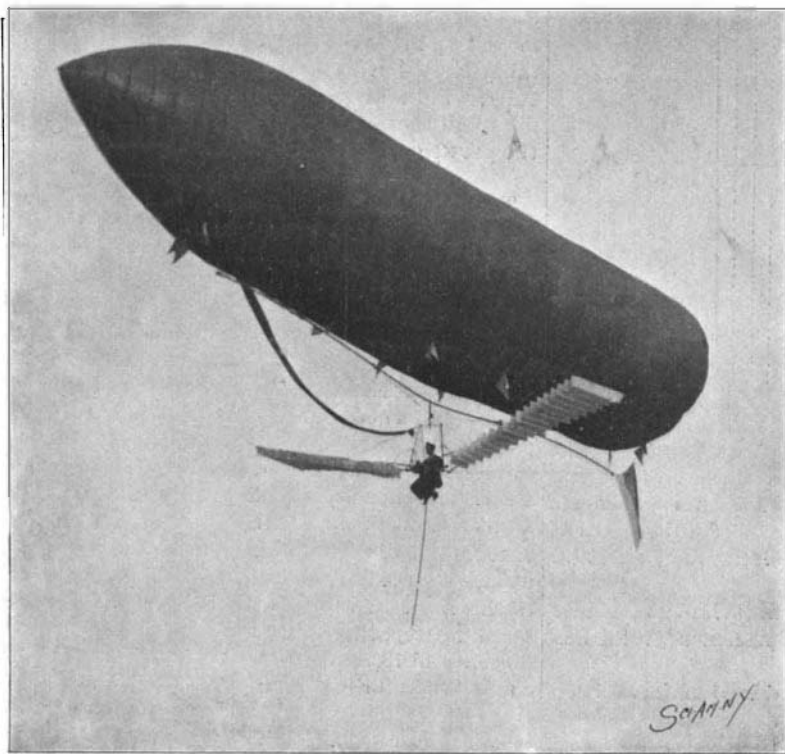
DANILEWSKY'S DIRIGIBLE FLYING MACHINE, SHOWING WINGS.

evidently the cause of their taking the berries at such an early period as September. The next bit of evidence which the correspondent obtained was when he discovered a number of similar pellets consisting entirely of seeds and skins of yew berries, the former being a bright green and the latter as scarlet as when they were on the tree. In one of these pellets he counted twenty or more seeds. The real difficulty in accepting this explanation is that, so far as we know, no one has actually seen the birds eject the seeds. Two friends of his came very near seeing the accomplishment of this process. A thrush was seated under a yew tree going through violent contortions, its wings drooping on the ground. They thought it was ill, but it flew away strongly as if nothing was the matter. Another correspondent of Nature saw thrushes feeding freely on the berries of the Daphne mezereum, an undoubted poisonous plant. In this instance there is

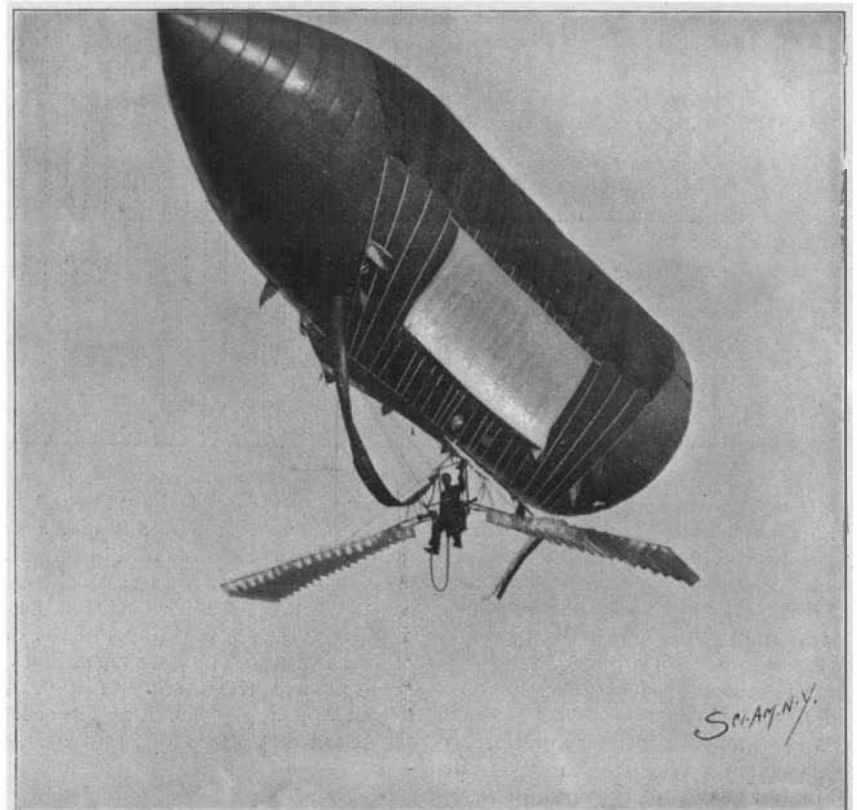
York electric carriages succeeded in getting along rapidly when the ordinary cab could only proceed at a snail's pace, which may be regarded as a genuine victory for the electric carriage.

To Our Subscribers.

The present issue of the SCIENTIFIC AMERICAN is the fifty-third number of the year, so that our subscribers really receive an extra copy gratis. With this issue doubtless many subscriptions will expire, and we request such of our readers as have not already done so to remit at once, so that there will be no break in their receipt of the SCIENTIFIC AMERICAN. We cease sending the paper immediately on expiration of the subscription, as we feel that this is fairer than to continue sending the paper and collecting for it at a subsequent time, as is done by many periodicals. We shall



THE WINGS RAISED IN MIDAIR.



WINGS DEPRESSED.

contained an interesting letter on this subject in which the views of a number of writers are presented. The correspondent of this journal states that he believes the birds eat largely of these berries, both the pulp and seed, and they very shortly afterward eject the seeds and skins by the mouth, thus avoiding the poisonous substance. He states that where a number of thrushes fed on the berries of *Pyrus aucuparia*, for at least a square mile of ground every patch of

little question that they ejected the seeds. He said they were so stupefied that they apparently might be taken with the hand. Another writer found that pheasants were killed by eating the leaves of the yew tree, and similar instances have been recorded. Everyone is familiar with the manner in which owls disgorge the fur and bones of mice and the skulls of small birds—a habit which is shared by all the raptorial birds. The habit of ejecting the indigestible and

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