

**THE BOXING KANGAROO.**

As is well known, the electric pendulum consists of a very light ball of pith which is suspended by means of a silk thread from an iron wire that is bent at right angles, the longer leg of the angle being placed in a glass foot for the sake of insulation. If the little ball is approached by any object charged with electricity, it is at first attracted and then, upon being touched, is repulsed by it. The accompanying illustration, for which we are indebted to our worthy contemporary, the *Illustrirte Welt*, shows an original way of presenting this old principle. The figure of a boxer is cut out of a visiting card and covered on the back with tin-foil, which is cut a little larger than the figure, so that it can be turned over the edges of the card. One foot of the figure is stuck into sealing wax on a small block, and to the back of this leg is secured a piece of iron wire. As the other foot does not touch the support, it is insulated from it. The figure of a boxing kangaroo in position for making an attack is now cut out of tracing paper. This figure is also covered on one side with tin-foil and then is suspended by a linen thread from one end of a piece of iron wire that has a rectangular bend, the other end being set in the supporting plate so that the kangaroo shall face the boxer, as shown in the engraving. In order to obtain the necessary electricity, we take a glass lamp chimney, stop one end of it by means of a cork, and in the center of the cork drive a nail to which is secured one end of a piece of small iron wire, the other end of the wire being connected with the wire on the back of the boxer's leg. Now our apparatus is complete. After the lamp chimney has been carefully dried it is rubbed with a piece of silk or fur, thus generating electricity, which is transmitted to the boxer. The kangaroo is strongly attracted by the figure thus charged with electricity, which it attacks, but a discharge of electricity takes place at once and the animal is repulsed. This is followed by a series of attacks and repulses, the struggle between the man and beast being constantly renewed as long as the rubbing of the chimney is continued.

**AN ELECTRIC BROUGHAM.**

Among the numerous automobiles exhibited at the electric show in this city recently was a peculiarly designed electric brougham built by the Riker Electric Motor Company.

It will be noticed that the storage batteries are distributed equally at the front and rear of the body, one portion under the driver's seat and the other in a rear box, the top of which is covered with slats intended for holding trunks and baggage.

It is said this is a pattern used considerably in Paris, where this vehicle was to be sent. The interior is richly upholstered and is equipped with electric lights and other conveniences found in modern coaches.

The vertical driving lever for operating the controller switch is located at the center of driver's seat as well as the steering lever. A combined volt and ampere meter is fixed in front of the driver at the foot of the dashboard. The current from the battery is applied to two motors attached to the rear axle, each having a capacity of 2 kilowatts, whose pinions engage the gear circular rack attached to the interior face of the solid rubber-tired rear wheels. The weight of the vehicle is 4,000 pounds. It travels at three different speeds, the highest being at the rate of 10 miles per hour. The battery after one charging is good for a distance of 25 miles on a level macadam road. For city use it is found to be more economical than a pair of horses, and occupies less ground space than the usual coach and team.

**The Age of Yew Trees.**

It is believed that the yew tree even exceeds the oak in age. In England and Ireland it is nothing unusual to find yew trees which, according to authentic accounts, date from 1000 A. D. Many of these trees are celebrated in history and legend. There is an immense yew tree in Wiltshire with a hollow trunk capable of accommodating a breakfast party. In England yew trees are frequently planted in church yards,

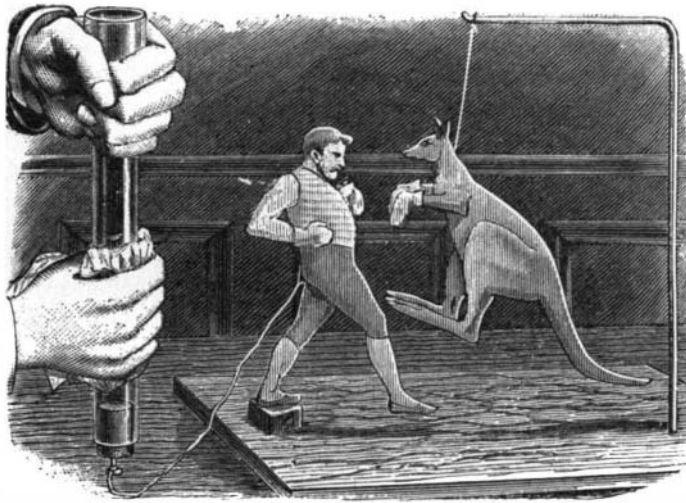
and it is probable that this is the result of the somber and funereal aspect of the tree, which renders it particularly appropriate to places of sepulcher.

**Nature-Study at Cornell.**

BY ALICE DINSMORE.

Nature-study, according to Prof. Bailey, "is seeing things which one looks at, and the drawing of proper conclusions from what one sees." A simple enough thing to do, it would seem, and yet really so difficult, that the College of Agriculture of Cornell is holding a summer school in the art. It is free to teachers in New York State, but open to others on payment of tuition, and more than a hundred students have availed themselves of its advantages this season.

The instruction is divided among three departments: in insect life, in plant life and in farm work. Prof.

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Comstock, the entomologist, directs the study of insects. He or Assistant Prof. A. B. Comstock lectures an hour two mornings a week. "The metamorphoses of insects," "the grasshopper," "the cicada," are among the subjects that have been discussed, and the lectures are fully illustrated by charts, drawings and cabinet specimens. Not only is the life history of an insect told, but interesting side-lights and latest discoveries not yet recorded in books are added.

The lecture ended, the class is divided into sections, each led by an instructor, and goes out with nets and cyanide bottles to find specimens in as many states of development as possible. These are brought back to the laboratory, where each student has a breeding cage made of a flower pot with sod and foliage in it, covered with a large lantern globe made tight with muslin tied over the top. In this insects are put, so that their manner of life may be watched. Later in the day, an insect is dissected and drawn in whole and in parts, so that his curious anatomy and functions are understood as is possible in no other way.

Prof. Bailey's instruction in plants is along similar lines and by like methods. The excursions to the bor-

der of Cayuga Lake where aquatic life can be observed in its little known habitat, visits to the numerous wild and beautiful gorges in the vicinity, and to the gardens and forcing houses on the Campus are among the most profitable exercises in this department. The beautiful and the ethical, the egoistic and altruistic sides of plant life are all brought to the attention of the students.

Many find a day with Prof. Roberts on the farm the most interesting of the whole week. He, too, begins with a lecture: "Cereals and the potato." He includes in it directions about soils and fertilizers, manner of planting or sowing and cultivation, and illustrated by blackboard drawings, root growth, etc. The scene of his later instruction may be in a barn or a hay meadow or a potato field, or elsewhere as suits his subject. He also gives a great variety of useful lessons on the best means of raising both plants and animals, also in regard to farm management and the beautifying of farm houses.

The professors and instructors are all enthusiastic in their departments, and they find eager response from a large number of the teachers who are studying.

Each student arranges captured insects in a case. Some are making collections of plants. All who wish are to have specimens of soil to take home.

The ultimate aim of the College of Agriculture is very far-reaching. It is believed that when these teachers begin their work in September, it will be with so fresh and intelligent an interest in out-door life, that they will plan to get a few minutes a day with their pupils in the study of these common but little understood subjects. Thus, it is hoped, children will be encouraged to watch the strange and beautiful changes going on about them in field and air and forest.

But most of all, it is hoped that the large outcome will be such a love for the country on the part of the boys and girls now in the schools that they will prefer to stay on the home farm instead of leaving it for the city; or, if it is their misfortune to be city-bred, that when they can have homes of their own, they will choose them in the country.

In short, this is the latest effort toward the solution of the "abandoned farm" problem.

**Yellow Fever Researches.**

The present outbreak of yellow fever at the Soldiers' Home at Hampton, Va., gives an excellent opportunity for the members of the army medical corps to carry on investigations as to the nature of yellow fever, which they have already been prosecuting for the last two years. At present the medical world seems to be of the opinion that the specific bacillus of yellow fever has not been satisfactorily identified, notwithstanding the announcement that Dr. Sanarelli has segregated the germ of yellow fever. Surgeon-General Sternberg of the United States army has isolated the bacillus, which he terms for convenience "bacillus X." It is not claimed that this is the specific germ of yellow fever, but only one which is worthy of closer study. The surgeons of the Marine Hospital Service who have been

studying the question in Cuba will soon make public a report on the matter. It is believed that their conclusions will be identical with those of Sanarelli. Dr. Doty, Health Officer of New York, is carrying on experiments with a serum for the destruction of the bacillus discovered by Sanarelli.

THE St. Clair and Erie Ship Canal project involves building a canal across the narrow neck of land separating Lake St. Clair and Lake Erie; the distance is only thirteen miles. The construction of this canal would save seventy-nine miles of dangerous lake and river navigation. The canal would be of great advantage to the United States shipping. The shipping passing through Detroit amounts to 32,000,000 tons per annum, and it is estimated that at least two-thirds of this amount would use the canal. The Canadian Engineer claims there would be a saving of \$1,014,000 a year to the vessel-owners by reason of the shorter and safer route via the canal.

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