THE FLYING FOX.

This is the largest of the bat tribe, some of them measuring nearly five feet in expanse of wing. The name "flying fox" has been applied to this animal on account of the red fox-like color of the fur and the very vulpine aspect of the head. Although of large size it is not to be dreaded as a personal enemy, for unless roughly handled they are not given to biting animated beings. They are, however, great destroyers of fruit and are much dreaded by agriculturists. There are but two methods of guarding against their ravages, one being to cover the entire tree with netting; the other, to protect the branches of fruit individually with nets.

These creatures are natives of the East Indies. Their flight is unlike that of the more active insect-feeding cheiroptera; the stroke of the wings is slow and steady, and instead of the devious course which characterizes the carnivorous bats as they flit about the air in chase of their insect prey, these frugivorous species fly in straight lines and to great distances. They do not seem to care much for dark, retired places of abode; and pass the day—their time of repose—suspended from large trees, preferring those that belong to the fig genus. On these boughs they hang in vast numbers, and by an inexperienced observer might readily be taken for bunches of large fruit, so closely and firmly do they hang. If disturbed in their repose they set up a chorus of sharp screams and flutter about in a state of bewilderment, their eyes being dazzled by the glare of the sun. They are apt to quarrel under such circumstances and fight for their hanging places.

It seems strange that the bat should be used as an article of diet, but there are those who find a favorite article of food in the cheiroptera.

The species most generally eaten is the edible kalong (*Pteropus edulis*), a bat found in great numbers in the island of Timor and other places. The flesh is said by those who have ventured upon so strange a diet to be very delicate in flavor, tender in substance, and white in color.

The bats belonging to the genus *Pteropus* possess fewer vertebræ than any other known mammal. The hair with which the bat tribe is furnished is of a very peculiar character. Each hair is covered with minute scales, which are arranged in various ways around a central shaft.

Bats hibernate in the colder months, and respiration during hibernation ceases almost wholly: if it takes place at all it is so slight as to defy investigation.

Pruning Forest Trees.

A. J. Burrowes, in *Journal of Forestry*, says that pruning, though it may lessen the actual produce of wood, increases the more valuable dimensions of timber, by directing the energies of the roots, etc., to its formation. 2. It enables us to produce the largest crop of timber upon the smallest area. 3. It lessens the effects of shade, both upon the underwood and upon other crops. 4. By admitting a freer and better circulation of air among the boles it checks the growth of mosses and lichens. 5. It gives greater lengths to the trunks, and produces timber of a better quality and of a cleaner grain. 6. The judicious pruning of side branches prevents stag-headedness, with its attendant evil of decay extending down the trunk. 7. Pruning prevents accidents from the browsing of cattle, from winds and falls of snow, as well as from excessive weight of foliage. 8. The foreshortening of the lower branches directs more sap to the head, thereby maintaining the vigor of the tree. 9. It permits the growth of underwood close up to the boles. 10. By timely pruning an equal quantity of good timber can be grown in about two thirds the usual time. 11. A timely lightening of the head, or such a pruning as will enable it to maintain its equilibrium, prevents shakes. 12. Upon coniferous trees the pruning back of dead and dying side branches gives soundness and freedom from all knots to all succeeding annual growths of the wood. 13. The close and continuous pruning of elms imparts to the timber that gnarled character which, by preventing splitting, makes it so valuable for the naves of wheels and other purposes. 14. A careful thinning or pruning of underwood stools increases the general weight as well as the value of their produce.

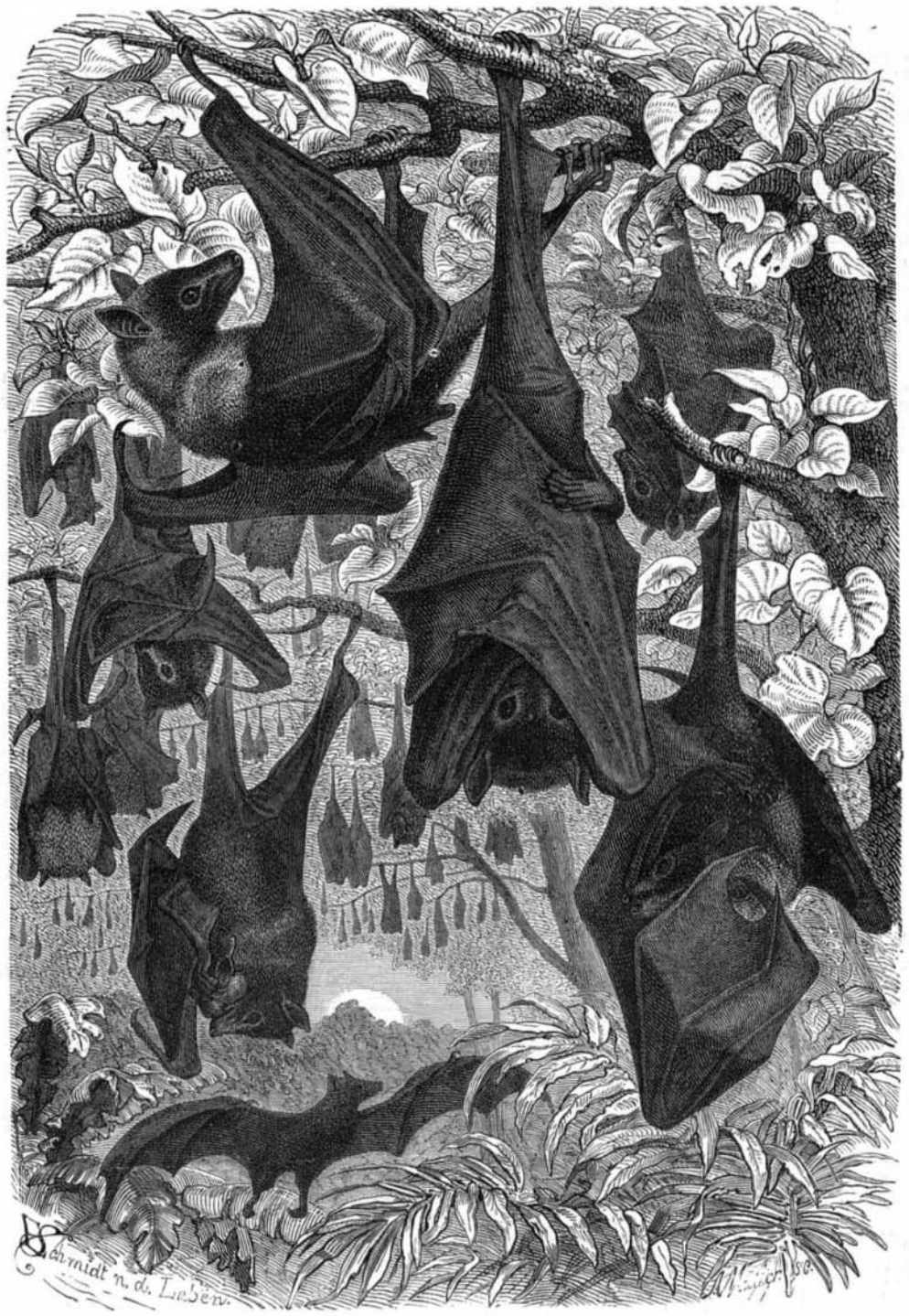
Vegetable Silk.

The possibility of obtaining vegetable silk is based upon the observation first made by Mulder that silk is soluble in certain liquids without being decomposed by them. While, for instance, cellulose is dissolved and at the same time destroyed by concentrated sulphuric acid, fibroin, the real substance of silk, dissolves in muriatic acid, in a solution of the oxide of copper in glycerine, etc., just as sugar dissolves in water, and though, of course, disorganized (*i. e.*, its structure destroyed), it can be reprecipitated as fibroin from all these solutions. In this reprecipitated state it appears, after being washed and dried, as a soft amorphous powder of a silky luster, and capable of taking up certain dyes from their solutions without the aid of a mordant.

In order to make use of these facts in cotton dyeing, by precipitating the above substance on the fiber of cotton according to well known principles, A. Muller and E. Sopp obtained, in A. D. 1871, French, Belgian, and English patents for the production of a mordant from silk waste, by means of which greater brightness is communicated to vegetable fibers, and they are rendered capable of taking up dyes in the same manner as silk.

This process, in consequence of various technical defects, has fallen short of the great expectations entertained, and has remained dormant. The patentees have never intended in this manner to convert cotton into silk, but remained, as may be seen from the title of the patent, within much more moderate limits.

Whether other chemists who have taken up the first idea and have enlarged it into the "conversion of vegetable fiber into silk," have been more fortunate, I am unable to decide. The matter is, however, worth a close examination.—*A. Muller, in Färber Zeitung.*



FLYING FOX, OR ROUSSETTE.—*Pteropus Rubricollis*

Sweet Potato Sugar.

The California correspondent of the Baltimore *Sun* writes that a new variety of sweet potato is being cultivated in Kern county, the extreme southeastern corner of California. They call it Ocean Queen. Picked specimens weigh from 15 to 18 and 22 pounds. The yield is so great that they are fed to hogs, which thrive amazingly and make extra pork. Recent tests suggest that they will make better and cheaper sugar than beets. Dr. Stocton is organizing a sugar company to utilize his large crop as well as his neighbors'. This gentleman made last year 125 barrels of luscious table sirup from watermelons. The profit realized encourages him to largely increase the product this year, and to make it a permanent industry. He has farmed grain in this State long enough to know there is no money in it. He finds also that it does not pay to mill raw sugar beets. But he believes if the roots be cut and dried by modern methods, that the present sugar factories would be profitable. He gets one gallon of sirup from eight gallons of melon juice, by his crude method. While sirup pays so well there is no inducement to make melon sugar, even if it would crystallize, which our American varieties do not. But seed of the right kind abounds in Hungary.

The Antiquity of Forks.

Among the recent finds in the exploration of the relics of the ancient lake dwellers of Switzerland is a pair of forks, apparently invented for table use. They were fashioned from the metatarsal bone of a stag. This gives a higher antiquity to table forks (if they were really intended as such) than has hitherto been suspected. Other bone implements and ornaments are frequently found. Animal remains are also common. Among them are the bones of the dog, the badger, and the common otter. The latter were doubtless met with in the immediate neighborhood of the lake, but the presence of the bones of the wild ox and of the bear indicate that the lake dwellers were bold and skillful hunters, as well as ingenious tool makers. They were also keepers of cattle, for the most numerous animal remains brought to light were those of the common cow and the moor cow. These exist in every stage of growth, showing that their owners had a taste for both veal and beef, while their fondness for venison is proved by the many bones of the stag and roe discovered by the explorers. Evidence of a like character shows that they were hunters of the wild boar and eaters of the domesticated pig, and the existence of the beaver in Switzerland in prehistoric times is attested by the presence, among other bones, of several which comparative anatomists declare to have belonged to that rodent. One omission on the list is striking. No mention is made of the bones of horses having been found, from which it may be inferred with tolerable certainty that the horse was either altogether unknown to the ancient lake dwellers, or that they had not succeeded in capturing and taming him.

The Fat Secreted by the Liver.

According to Dr. Neumann, the liver furnishes a variety of fat, which is distinguished from others by the rapidity with which it oxidizes to serve for nutritive purposes. This fat, like glycogenic substances, is the result of the transformation of albuminoids. The production of fat in the liver is comparable to that which occurs in the mammary gland, and is a true secretion. Its activity is in an inverse ratio to the oxidations which take place in the organism. Everything which tends to limit these oxidations promotes the production of fat in the liver (pulmonary lesions, debilitating influences, anæmia, and cachexia). In such cases, the liver at last becomes infiltrated with fat—a condition which is physiological in animals in which the respiratory functions are languid (fishes). When, under the influence of debilitating causes, the wants of the organism increase to a high degree, the liver does not suffice for these excessive demands; the fat-forming function becomes paralyzed. The albuminoid matters, undergoing metamorphosis in the liver, no longer produce fat, but a substance less adapted for combustion—amyloid substance—is formed. It is true that amyloid degeneration of other organs may precede that of the liver, but this is due to the fact that the diseased liver pours into the circulation the morbid products, which then infiltrate the tissues with which they come in contact, and especially the varieties of the smaller vessels.—"*Deut. Arch. für klin. Med.*"—*New York Medical Journal.*

TREATMENT OF COLIC.—Phares' method consists in *inversion*—simply in turning the patient upside down. Colic of several days' duration has been relieved by this means in a few minutes.—*Jour. des Sci. Med.*