workers, in which case he would net between $7,000 and $10,000 for the year's product, without taking into account the sale of swarms or of queen bees. This successful apiarist estimates the year's total outlay at $2,100, nearly half of which, however, is interest on capital which has grown up with the business.

The Devil's Plant.

Emerson's definition of a weed, as a plant whose uses had not been discovered, seems to be happily applicable to the *Abutilon avicennæ*, politely known as "velvet leaf," but called by Jersey farmers "devil's plant." Gray describes it as tall; leaves roundish heart-shaped, taper-pointed, and velvety; peduncles shorter than leaf-stalks; corolla yellow; pods 12 to 15, hairy, beaked; annual; abounds in waste places, escaped from gardens. Imperfectly naturalized from India.

This thrifty weed has become a perfect nuisance in New Jersey and Pennsylvania; possibly in other States. It appears to survive almost any amount of hardship and ill treatment, and is heartily hated by farmers and gardeners. Yet, if recent reports are true, this troublesome plant promises to become one of the great sources of national profit, owing to the superior fiber it has been found to contain. The discovery of this fiber, the Philadelphia *Record* tells us, was brought about by a French gentleman, M. Emile Le Franc, who has resided in America for about nine years. He is an authority on fibrous plants, and has written several reports on the subject for the National Agricultural Department. During the Centennial he came to reside in Philadelphia, and devoted some of his spare time to an examination of the fibrous plants of New Jersey.

The *Abutilon avicennæ* attracted his attention, and a little investigation brought him to the conclusion that the plant possessed no inconsiderable value. He commenced operating by a secret process of his own invention, and found that the bark around the straight stem contained a valuable fiber. With a little more labor this fiber was brought to the condition required by manufacturers, and several, to whom it was shown, pronounced it equal to the jute imported by them from India. M. Le Franc also found that the short fibers could be made into a new tissue which can be employed in the manufacture of a new fabric.

This important discovery was not to be allowed to slumber. M. Le Franc reported it to the New Jersey Bureau of Statistics of Labor and Industries, and also determined to go into the manufacture of jute and the raising of the "devil's plant." The Bureau gave its co-operation, and issued, under its seal, an offer from M. Le Franc to pay eight dollars per ton for straight jute stalks, not less than 3 or 4 feet in height, delivered in Camden. The circular also advised farmers to go into the cultivation of the plant, and gave important information relative to the sewing of seed, methods of planting, and other particulars. This circular was the first information which the Jersey agriculturists received of the prize which was contained in their former enemy.

The cultivation of the "devil's plant" is to be generally followed in different parts of New Jersey. As the plant is also to be found in Pennsylvania, it is anticipated that Pennsylvania farmers may find it to their profit to devote some attention to it. The discovery is calculated to have an important effect upon the trade of the country. Its ultimate result will undoubtedly be to render the United States independent of the world for a commodity which is now costing our manufacturers fully $10,000,000 annually. The total importations of hemp, flax, ramie, and jute into this country are valued at over $30,000,000 a year. The jute alone represents one-third of this amount. The supply comes exclusively from India, and the latter's trade in it has increased to such an extent that it has become the leading staple of Bengal. In this country jute is used for numberless purposes, among them for rope and carpet backs. It is also frequently mixed with linen in the manufacture of clothes. England, and in fact the whole of Europe, are dependent upon the Indian plantations for their supply.

The New Jersey Bureau is authority for the statement that "extensive jute rope manufactures of Philadelphia have offered to buy any quantity at the highest jute market price; that the long fiber is equivalent to that of the Calcutta prime jute, and that the manufacturers admit the superiority of the American variety over the imported." In the face of this testimony it is not too much to hazard the opinion that ere many years America will not only supply the home demand for the staple, but will also be able to inaugurate an export trade. At least so think those connected with the enterprise.

Porpoises and their Attending Gulls.

As we neared shore (Azores) a large shoal of porpoises was seen close by, going at great speed in full chase after fish, the whole shoal skipping together, four or five feet out of water for several successive bounds in hot pursuit. The shoal was closely attended by a flock of gulls, which follow in order to pick up the fish which are bitten or wounded by the porpoises, but which the porpoises have no time to stop to pick up.

In the Arafura Sea I have seen frigate birds hanging over a shoal of porpoises with the same object, and in just the same manner in the tropics terns and noddies follow the shoals of large predatory fish (Caranx) to pick up the crumbs.

The demeanor of a shoal of porpoises on the feed is a very different thing from their lazy rolling motion which one more commonly sees.—*Moseley.*

ARROW POISONS.

The rude knowledge of toxicology possessed by certain savage tribes has enabled them to compound various deadly poisons which have defied every attempt at analysis upon the part of chemists, for so cleverly have the various ingredients been combined that the most delicate quantitative analysis has failed to reveal the character either of the curare or woorari of South America, the carroval, or the more deadly Upas poison.

Curare, which comes to us as a resinous substance of a dark color, is contained in gourds or rude earthenware pots, and is full of impurities of various kinds, but chiefly of a vegetable character, and it is necessary to subject it to careful treatment with acidulated water to obtain the substance in anything like a pure condition. Prof. Jobert, of Paris, when at Caldera, Brazil, succeeded in bribing an Indian of the Tecuna tribe to disclose the secret of its preparation. He found it to be made of *urari uva*, a climbing plant of the order described by Weddell as the *Strychnos castelnæ; Eko*, or *Pain du maharao* (*Cocculus toxiferens*); *Taja, Eoné* (*Didelphys cancrivora*), and three of the *piperaceæ* of the genus *Arnante*, and a plant called *Tan magere*, or toucan's tongue. The powdered outer bark of the two former are ground together, and the leafy twigs of the taja are boiled together, and the other ingredients added. The product is a dark, muddy substance, which is curare.

Physiology has profited by the peculiar properties of some of these substances, and to the use of woorari some of the most valuable experimental results are due. For instance, when a very small quantity of this substance (less than a grain) is injected beneath the skin of a living animal there follows an utter abolition of motor power, the motor nerves being paralyzed, while sensibility is preserved. Respiration is stopped, so that no evidence of breathing is to be perceived; but the heart still beats, and if the dose be not too large, and artificial respiration be kept up, the animal will probably recover. The state is one of trance, consciousness probably being retained, while all the motor organs of expression are powerless and inactive. Strange to say, the poison has no effect if taken into the stomach.

Its physiological effects have suggested its use in medicine, and quite recently it has been employed in several convulsive and spasmodic diseases. Epilepsy, tetanus or lockjaw, and even hydrophobia have been cured, but great care should be taken in its administration.

The best plan is to make a solution in water acidulated with hydrochloric acid, and this, when mixed with glycerine and thrown beneath the skin daily, or several times a week, sometimes effects a cure.

It is occasionally possible to procure curare from the poisoned javelins which are brought here by travelers, but this is not often. A lance of this description is from 6 to 8 feet long, and is made of some strong, tough wood, and in a fissure at one end a sharp spike, made of a thorn or very hard species of black wood, is bound by grass ends. The spike is usually incrusted with a deposit of curare, about the sixteenth of an inch thick, and covered by a cap of reed, which prevents any danger of accident. A wound ever so slight from a weapon of this kind must produce death, and that of the most horrible kind, when we remember that consciousness and sensation are in no way blunted for some time, and the individual must appreciate the condition he is in.

The *Upas* poison is obtained from a tree growing in the East, known botanically as the *Antiaris toxicaria.* The expressed resinous substance possessing the poisonous properties is an oily, greenish fluid, and a very minute quantity is sufficient to produce instant death by paralysis of the heart. The poetical and entirely fanciful idea that the individual who ventures into the valleys in which these trees grow, or sits beneath the trees themselves, is certain to lose his life in the attempt, is in every sense erroneous, and these stories must be accepted only as "travelers' tales." It is probable that the only risk run by the individual is that which is incurred in subjecting himself to any malarial influence.

Among various savage tribes, notably the Australian natives who inhabit the lower Murray District, who are called *Narringeris*, the custom of killing their enemies with instruments known as *nielgerii*, is much in vogue. The specific poison is derived from the decomposing fluids of the human body, and the corpses of the dead are kept unburied for some time, until the process of decomposition has advanced to the proper point. From our knowledge of the accidents which follow dissecting wounds it would appear as if death by a wound of this kind would be exceptional, but such is reported not to be the case, and a scratch by the *nielgerii*, which is first dipped into the foul fluids of the body, is said to be rapidly fatal.

Some Facts about Cotton.

After noting the reasons for estimating the growing cotton crop at 5,000,000 bales or over, the President of the Mississippi Valley Cotton Planters' Association spoke as follows, at the late meeting of the association in Vicksburg, Miss.:

A crop of 5,000,000 bales, averaging three acres to produce a bale, would give us 15,000,000 acres, at $8 per acre, $120,000,000. One mule or horse to 25 acres, 800,000 mules, at $90, $72,000,000. Implements, harness, etc., and machinery, $50,000,000. Showing a permanent investment of $242,000,000.

Averaging three bales per hand would require 1,666,666 laborers, to feed and clothe which for a year with their dependents would average $50 each, $82,666,667. To feed team at $40 per mule, 800,000 mules, $32,000,000. Cost of bagging and ties at $1.40 per bale, $7,000,000. Cost of marketing crop at 1¼ cents per pound would give $25,000,000. Working capital, $146,777,777. Average price expected for present crop, 11 cents per pound, for 2,000,000,000 pounds, $220,000,000.

Recapitulation: Now we have—permanent investment of planters, $242,000,000; working capital, $145,777,777. Total capital invested exclusively in cotton cultivation, this estimate being made for the share system and not wages, $388,777,777.

Amount received for total crop, $220,000,000, which is divided equally between the planters and laborers. Planters therefore receive $110,000,000—from which deduct feed for team, $32,000,000; half cost bagging and ties, $3,500,000; half marketing crop as chargeable to planter, $12,500,000; 20 per cent in loss and decreased value stock, $14,400,000; 20 per cent in loss and decreased implements and machinery, $10,000,000—total $72,400,000. Repairing fences, houses, etc., at 10 per cent on permanent investment, $12,000,000. Taxes on permanent investment, 3 per cent, $7,260,000. Deduct these amounts from planters' share of crop, $110,000,000, which shows planters' profit on total investment for cotton alone is about 4¼ per cent, provided we get 11 cents for cotton, make 5,000,000 bales, and the laborer pays his accounts in full. Laborers' share of crop, $110,000,000; amount chargeable for food and clothes, $82,666,667; showing a profit for the laborer of $27,333,333.

It will thus be observed that the laborer receives $27,000,000 on investment on nothing but his muscle, while the planter receives $18,000,000 on an investment of $388,000,000 and his services.

Now we will omit the details of the number of slices that are plucked by the wayside, and suppose our crop has reached the factory, simply saying that about $25,000,000 more has been added thereby to the price to be paid by the manufacturer since it landed at the seaport from the planter. Our 5,000,000 bales now begin to loom up and assume some importance, for they run 12,500,000 spindles, which require nearly $1,000,000,000 in buildings, machinery, and working capital, and employ nearly 800,000 operatives and employes. The manufactured goods are sent to every part of the known world, creating a trade reciprocal business that can hardly be estimated, but without doing which, as can easily be seen, it will reach into the billions.

You can form no estimate of the number of banks, insurance companies, and trades of all sorts that are sustained in all the ramifications of this immense traffic, to say nothing of the fact that it serves to establish the equilibrium of the world's exchange and gives to the United States the balance of trade. Now, from the time the cotton leaves the planter every interest that touches or handles it has an organization for the sake of harmonious action and to protect itself; the transportation companies, the buyers and sellers, the compress men, insurance companies, bankers, shipping interests, and manufacturers and others too numerous to mention. And at last the foundation of all this mighty fabric of trade and commerce has awakened to the vital necessity of organizing our class for self-protection, and not only for self-protection, for all that is necessary in this respect is to show the world that we know our rights, and knowing dare maintain them, but also for the purpose of hereafter bringing more intelligence and interchange of thought to bear in the management of our business generally, in order that we may keep at home the millions we expend annually to feed and clothe our laborers, buy agricultural implements, teams and feed for teams, by diversifying our crops and encouraging manufactories.

To say nothing of the increased wealth and prosperity otherwise, if the cotton we raise was manufactured in the South it would save to the planter nearly $50,000,000 annually in transportation.

The manager of the Mississippi Mills, which uses 4,000 bales cotton, 350,000 pounds wool, and $800,000 capital, writes us that there is a difference of 15 to 20 per cent in favor of manufacturing cotton here over New England, and I judge there would be double this difference over Old England; and further, that while strikes and reductions of wages have occurred frequently of late years in New England, 600 operatives of the Mississippi Mills, all of whom, with the exception of three, are Mississippians, are contented and no reduction. Mill property is free from taxes ten years.

Mr. Richardson says it is the best paying property he has. Of course it can only be a question of time when the South will manufacture nearly if not all the cotton it raises. Circumstances may delay it, and we may not live to see it, but it will come.

The Oleander.

This beautiful plant, when under proper culture, is truly a gem among flowers. This is a good time for making cuttings of it. The best way to root them is in a bottle of rain water set in the window. The cuttings should be no deeper in the water than half way up to the second joint, and when the rootlets get to be half an inch long, carefully pot in rich, sandy loam. After the plant blooms, cut back to within a foot or fifteen inches of the ground, when three branches will come out; let them grow until it again blossoms, after which cut them all back about six inches from the main stalk, and every time it blooms repeat cutting back, and in a few years a very beautiful plant will be the result; in fact with proper care, it will grow more beautiful with age.