Thought and Labor.

Ruskin says: It is a no less fatal error to despise labor, when regulated by intellect, than to value it for its own sake. We are always in these days trying to separate the two; we want one man to be always thinking and another to be always working, and we call one a gentleman and the other an operative; whereas the workman ought often to be thinking and the thinker often to be working, and both should be gentlemen in the best sense. As it is, we make both ungentle, the one envying, the other despising his brother, and the mass of society is made up of morbid thinkers and miserable workers. Now, it is only by labor that thought can be made happy; and the professions should be liberal, and there should be less pride felt in peculiarity of employment and more in excellence of achievement.

MIGRATION OF BLOWING VIPERS.

BY C. FEW SEISS.

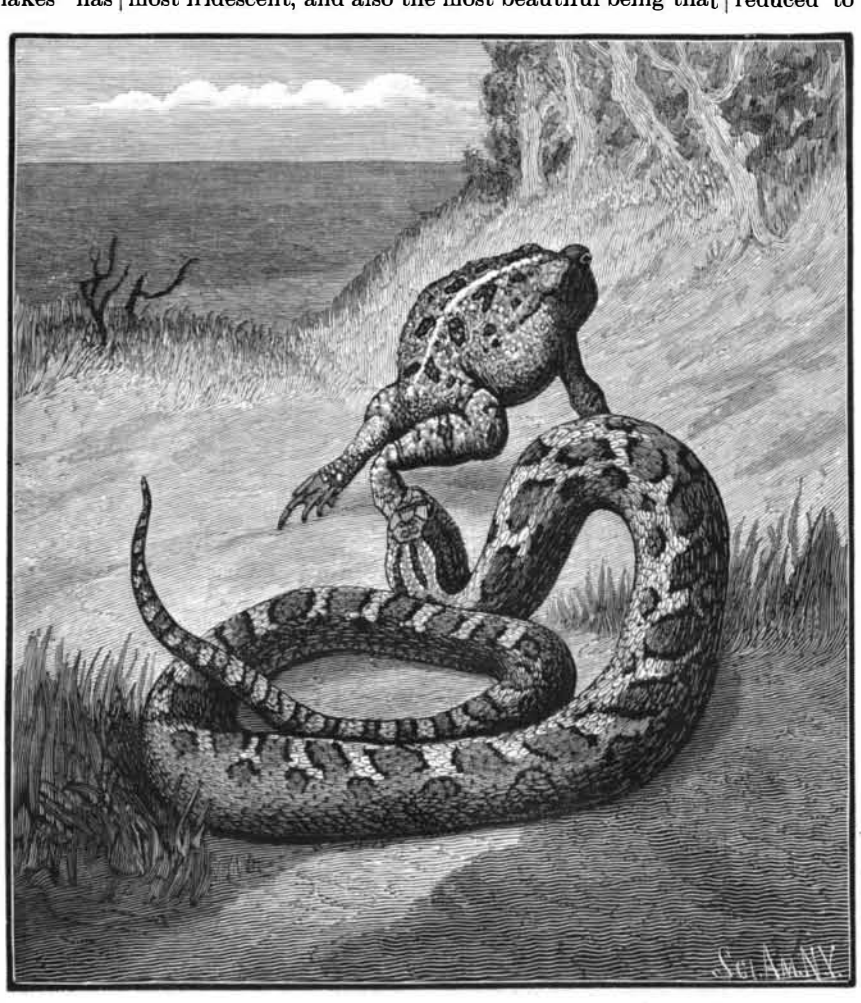
A few seasons ago, a narrow sandy island on the coast of New Jersey was overrun with countless numbers of the common toad (*Bufo lentiginosus Americanus*). The toad is generally of crepuscular habits, except during cloudy and rainy weather, but here they were met with, out in search of food, at all hours of the day, even beneath the hot glare of the noonday sun. It may be that, had they all waited until the cool of the evening to hunt for their insect prey, many of the weaker and less active toads would have been supperless. So, by hunting both by day and night, they were able to secure both diurnal and nocturnal insects. Over two hundred toads were counted in a short stroll between 4 and 5 o'clock in the afternoon of a July day. At this period there were no snakes of any kind to be met with on the island. That a few did exist I do not doubt, but they were not observed.

Now, this narrow island is separated from the mainland by a small bay or thoroughfare, which is perhaps over a quarter of a mile wide at its narrowest portion. The vegetation on the island consisted of little else than rank grass, stunted cedars, and pines.

In the season following the one above noted, the toads were again innumerable, but, what was startling, "blowing vipers" (*Heterodon platyrhinus*) were numerous also. They were observed in nearly every part of the island, and were seen pursuing, capturing, and swallowing the toads, as though bent on their extermination. Sometimes a toad would endeavor to escape by quickly burrowing into the sand, but the snake, having marked the spot where the toad disappeared, would force its head, with shovel-like snout, into the sand, seize the unfortunate toad, drag it from its hiding place, and swallow it.

What was the cause of this sudden appearance and number of snakes? They made their appearance in early summer, when the young *Heterodons* were not yet out of the egg, and it requires several months of growth before they are capable of mastering an averaged sized toad. Did they come from the mainland by swimming across the bay, which at its narrowest part is a quarter of a mile wide? This would seem like a great undertaking for a non-aquatic species, but, nevertheless, it is the only way in which they could have come. A migration of snakes has never before come under my notice, and yet I must consider this sudden appearance of "blowing vipers" as such. It is highly probable that food became scarce in their old haunts, and they migrated to the island in hopes of finding food more plentiful. It is not probable that their sense of smell is so highly developed as to have scented the toads from such a distance, and that they were quitting their old home with the certain knowledge that food in abundance awaited them on this sandy island.

In the summer following this migration, toads were not numerous, and only a few snakes were observed; and such, I learn, has been the case for the two or three intervening years since then. Of course, great numbers of the snakes were killed by man; not because they were thought to be poisonous, for this species is here generally and correctly understood to be perfectly harmless, nor always for mere wantonness, but from the belief that in destroying the snakes they were preserving the lives of many toads, which were beneficial to man, inasmuch as they fed upon mosquitoes. Now, the tormenting mosquito (*Culex damnosus*) is by far too small a species of game for the toad. I have examined the contents of the stomachs of several maritime toads, but failed to find mosquitoes. Very young toads, which have just left the water and the tadpole stage, do feed upon minute insects, such as gnats, ants, aphides, etc., but I refer only to the mature animals.



BLOWING VIPER SWALLOWING A TOAD. (Drawn from Nature.)

MOTHER-OF-PEARL.

The principal production of Tahiti is mother-of-pearl. This is what stimulates her commerce, this is what gives rise to the relatively important exchanges that take place in these far-off lands of Oceanica, and this is what attracts those vessels which, for a century past, have been sailing among the desolate and wild islands

PEARL FISHING IN TAHITI.

that make up the archipelagoes of Tuamotu, Gambier, and Tubuai.

On account of its rarity, mother-of-pearl has always been an object of luxury. Before navigators discovered that part of the world which is lost in the immensity of the Pacific, it was still rarer than it is now; it had more value, perhaps, but it was assuredly neither more sought for nor more prized. At present it is much employed in the manufacture of many objects. The mother-of-pearl employed in the industries is furnished by various species of shell-fishes, the most esteemed, most iridescent, and also the most beautiful being that produced by the pearl oyster. Again, two sorts of pearl oysters are distinguished. One of these, known as the pintadine (*Meleagrina margaritifera*), is found in China, the Indies, in the Red Sea, off the Comore Islands, to the northwest of Australia, in the Gulf of Mexico, and particularly off the Tuamotu and Gambier Islands.

The other, which is more commonly known as the pearl oyster (*Meleagrina radiata*), is found in the Indies, in the seas of China, in the sea of the Antilles, in the Red Sea, and to the north of Australia.

The former of these has a harder, more azure, and more transparent shell, and one that attains larger dimensions than that of the latter. Some have been found that measured as many as 12 inches in diameter and weighed more than twenty pounds. The *Meleagrina radiata* rarely exceeds 4 inches in its largest dimensions, and never reaches a weight of five ounces. The two species furnish pearls. According to the fashion, or the prevailing taste, sometimes those of the one are preferred and sometimes those of the other; nevertheless, those of the pintadine have a brighter luster and more transparent and intense tones than those of its congener.

It is difficult to estimate the money value of the pearls collected in the French possessions of Oceanica. We cannot even fix upon an approximate figure as regards this, since this commerce escapes all control, and proceeds after a manner clandestinely. Some estimate that it reaches about $20,000 per annum, and others that it amounts to $100,000. According to what I have seen in the Tuamotu Islands, and, on another hand, considering the quite large number of persons who, at Papeete only, are concerned in this trade and live by it, I would give it as my opinion that it amounts to $60,000. The most important markets for fine pearls are found in England.

The pintadine comes from the tropics. The archipelago of Tuamotu and Gambier is, as I have stated, the point where it is found in the greatest abundance. Here it finds surroundings that are congenial to it.

This archipelago, which was annexed at the same time as the islands of Tahiti and Moovea, consists of eighty islands, almost all of which yield mother-of-pearl, and seventy-two of which are inhabited intermittingly by individuals of the Maori race. France has an excellent and devoted population there, which is very proud of its new nationality, and which remains indifferent to all attempts made against our influence. It loves France, proclaims the fact, and manifests it loudly every time that occasion requires it. Industrious, docile, submissive, of mild and simple manners, observing with scrupulous fidelity the laws and regulations that have been given it, it is one of the poorest on the face of the globe. The narrow tongue of land, or rather the crown of arid reefs that surrounds the lagoon of these coral islands, and which is destitute of vegetation, scarcely affords this people sufficient food for its miserable and precarious existence. While the neighboring happy population which dwells upon the fortunate shores of the Society Islands leads a life of ease and pleasure, where everything grows without labor and in abundance, the unfortunate Tuamotun is reduced to the necessity of feeding upon the cocoanut and a few rare and meager seeds of Pandanus (nearly the only fruits on these sandy shores), fish, and shell-fish, which, during several months in the year, are poisonous.

The Tuamotu people are essentially nomadic—through necessity as well as through taste. When one lagoon is exhausted, when diving no longer yields anything, the native, without sorrow or regret, or without caring even, places his family and his goods in his boat, abandons the hut that he had built, and goes, somewhat at the will of the winds, to seek elsewhere, in another island, the wherewith to live. His only industry is diving. All take part in this—women as well as children. The women have a truly wonderful aptitude for this arduous and laborious occupation. At Anna there is a woman who explores depths of 25 fathoms, and sometimes remains under water for three minutes, and she is not an exception. And, then, how dangerous are these investigations in the dark depths of the lagoon, where reign as masters hungry sharks, which, when they cannot be avoided, must be fought! There does not pass a year in which some diver does not come out of the water mutilated. When an accident happens, terror reigns among the divers, and the fishing for mother-of-pearl ceases for some days. But this feeling of fear and of danger does not last, for it becomes necessary to give way to the imperious needs of life. To the Tuamotun, mother-of-pearl is current money. It is with this that he buys the scanty clothing that he wears,

and the little bread, flour, and provisions that he eats, and, finally, the alcohol for which, like all the inhabitants of Oceanica, he has a pronounced passion.

The picture which I have just sketched is exempt from all exaggeration. I cannot enumerate the sufferings of these brave people who are so attached to us, nor the vexations that they have been subjected to on the part of trafficking strangers.

Twenty or thirty years ago the trade in mother-of-pearl in the Tuamotu Islands well paid those engaged in it. By means of a bit of valueless fabric, a few handfuls of flour, or a few pints of rum, there was obtained a ton of mother-of-pearl, worth two hundred or four hundred dollars, or many beautiful pearls whose value the natives ignored.

The archipelagoes were frequented by boats of various nationalities. Mother-of-pearl was abundant, and pearls were not so rare as at present. Since then the number of trading vessels has increased.

The aborigines, enticed by the advantages of a commerce that was becoming more and more fruitful in measure as competition extended, betook themselves to fishing with improvident ardor, and now they find that the lagoons are less productive, that they are becoming depopulated, and that some of the most fertile of them are giving signs of exhaustion.

The interesting situation of the population of the Tuamotus, the danger by which it was menaced of being deprived of all resources and of all work, and also the fear of soon seeing one of the most productive sources of revenue of the Tahitian colony exhausted, and the principal element of its commerce disappear, attracted the enlightened attention of the colonial administration. With an eagerness that the Colonial Council of Tahiti has had to thank him for, the Under Secretary of State had the goodness to select me to go on a mission to Oceanica. The programme of studies he gave me was as follows:

(1) What is the real state of the oyster producing lagoons? Are they beginning to give out? If so, what is the cause of it, and how can it be remedied? (2) Would it not be possible to create an industry for the culture of the pearl oyster at the Tuamotu, Gambier, Tahiti, and Moovea Islands analogous to that which exists in France for the culture of the edible oyster? Would it not be possible by this means to procure remunerative work for the indigenes of Tuamotu, and one that should be sedentary and continuous, and that would render them independent and free them from the cupidity of dishonest traders, whose dupes and victims they are? Would they not thus be preserved from the trouble and danger that result from the assiduous practice of diving? Would it not be a means of attaching them to their home, their family and native island, prepare a more peaceful life for them, and gradually lift them toward the social level of the peoples of ancient civilization? (3) Is there any way of regulating the fishing for mother-of pearl in the archipelago? If so, what should be the bases thereof?

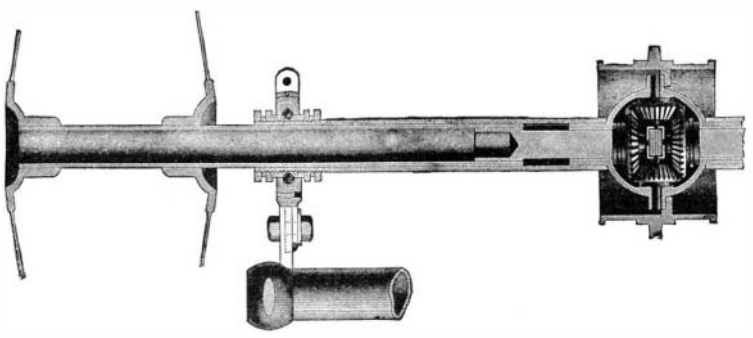


Fig. 2.—SECTION THROUGH AXLE.

Although statistics do not show a great diminution in the production of mother-of-pearl, it results from the minute investigation that I made upon the very spot that the lagoons are becoming poorer and poorer every day, and that in order to secure oysters of merchantable size the divers are obliged to visit great depths. I estimate that if we do not take prompt and vigorous measures, the lagoons of Tuamotu will run the risk of being very much impoverished, if not ruined, in a few years. The arrangements applied by the administrators who have succeeded one another at Tahiti were assuredly excellent, but they were insufficient to avert their ruin.

The forbidding to fish in a certain number of islands for a few years, so as to favor their regeneration, could not produce such a result, since, contrary to what has been thought, the pintadine is not unisexual, but hermaphrodite. The cause of the impoverishment of the lagoons is due to the abusive and improvident fishing that has been done in them.—*G. B. Brandley, in La Nature.*

THE *London Iron Trade Exchange*, on the tin plate trade, says: "Competition is as keen as a razor, and business is only made at the meanest profit."

Training Cavalry Horses.

Major W. K. Arnold, of the Sixth Cavalry, stationed at Fort Bayard, New Mexico, has undertaken the training of the horses used in his service, so that they will lie flat on the ground on command of the trooper.

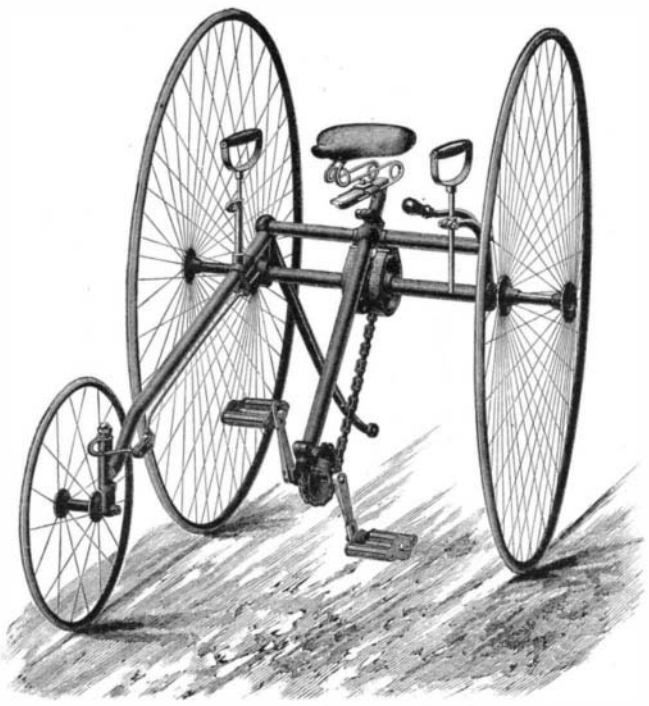


Fig. 1.—COLUMBIA TWO-TRACK TRICYCLE.

The result of his experiment has proved very encouraging thus far (about twenty-five horses have been thus trained), and nearly all of them lie down by merely taking hold of the left fore leg. The men can climb all over their bodies, and fire in various positions, without the horses stirring. Another desirable result of this training is that men who were formerly timid have become courageous and confident in the handling of their horses, and horses formerly dangerous are now thoroughly gentle. Army officers have become very much interested in the matter, and it is not improbable that more extensive experiments will be made in this direction. The value of a large body of men mounted on animals that will lie down at a touch and suffer guns to be fired over their bodies in action is apparent.

THE COLUMBIA TWO TRACK TRICYCLE.

The Columbia two track tricycle, of which we show a perspective view and also views of the more important characteristics, will present many points of interest to those who have studied and compared machines. It has been designed and made after careful study of every detail, and although many improvements have been adopted, it still contains all those details which extended use in the older machines has proved to be particularly applicable to the services required; thus the adjustable ball bearings and compensating swivels have their superior excellence too well established to be displaced. The middle driving or short crank shaft feature is a return to an old principle of tricycle construction which has at times been displaced for necessities of other parts or fashions in structure, but which, for steady effectiveness and lightness in this machine, is believed to be the best. The two track feature, though not broadly new, has been here embodied with improvements, so as to give equal steadiness of running and the stability of front steering, with the advantages of an open front for convenience, and but two lines of resistance to the wheels to watch and overcome.

Fig. 3.—SEAT.

Among the new features may be mentioned the Wallace dwarf steering head, which, besides its graceful and neat appearance and its lightness, conducts the strain more directly from the steering wheel to the driving gear, and insures steadiness of motion; the spiral rack and its connections, by which the steering apparatus is made most simple and effective, and is most out of the way and least subject to disarrangement; the three part frame, which affords just the parts needed, and no more; the double hand brake, which combines effectiveness with certainty and ease of action; the combination of brake drums, sprocket and balance gear together, and in the middle under the seat; the large, weldless, steel tubular axles in place of solid shafts, which are heavier and more likely to break.

The inclined seat rod operates to move the saddle backward also, when it is raised, so as to preserve the relative positions of seat and pedal, for the taller rider has a longer upper leg as well as lower leg; and by an ingenious attachment of the crank supporting tube, tangent to the horizontal one instead of flush with it, as usual, this seat rod is made to move in and out free of everything. Another and most valuable new departure is the building of the wheels directly upon the tubular half axles, thus obtaining a firm wheel, a safer axle, and dispensing with a large amount of misplaced material. These and other improvements have reduced the weight of a tricycle more than twenty pounds, while adding to its strength. The driving wheels are 48 in., and the steering wheel, tracking before the right hand driver, is 20 in.

The Columbia two track tricycle is made by the Pope Manufacturing Company, of 597 Washington Street, Boston, Mass.; it will be placed upon the market about the middle of April.

Skate Rollers.

"In less than one year the price of boxwood has trebled," said a hardwood dealer. "The roller skating mania has completely exhausted the market of a certain size of boxwood. Less than eighteen months ago I could sell a ton of three inch boxwood for $38, and it would be first grade wood in every respect, and admirably suited for turning small work. The demand then was steady, and the principal consumers of the wood were rule makers, tool manufacturers, and turners, who supplied the market with boys' tops, pool pins, and toys of various kinds. The sudden and remarkable growth of the roller skating pastime has created a constantly increasing demand for a certain size of wood, and now it is impossible to purchase a ton of suitable wood for skate wheels for $120. Rollers are made in several sizes, ranging from 1⅝ to 2⅛ inches in diameter, and only the natural growth of boxwood approximating these sizes is fit for use. Large wood is too costly, and is less firm in resisting the tremendous strain of a skater's weight upon an axle only 7-32 of an inch in diameter. The boxwood grows in Persia and Turkey, and heretofore the crop has always been handled in England. It is a wood of very slow growth, and in its native country stringent timber laws restrict the depletion of the growing trees. At the present rate of consumption, the world will be practically exhausted of its boxwood in less than twelve months unless some equally cheap and durable substitute is found to take its place."

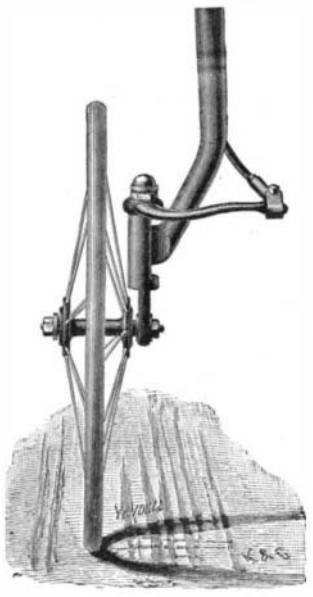


Fig. 4.—STEERING WHEEL.

"Has nothing been tried which gives promise of superseding boxwood?" asked the reporter.

"Yes, rubber, celluloid, rawhide, vulcanized fibers, and compressed paper have been tried in making rollers, but for one reason or another they have proved unsatisfactory. Some have proved too soft, while others, like the pure celluloid wheels, have been found too expensive for general sale, and the necessary metal bushings have proved objectionable, because the grit and dust from the floor and shoes of the skaters, wearing between two metal surfaces, has rapidly cut away the axles of the skates. Rollers with anti-friction bushings consisting of a number of small steel plugs freely revolving around the axles have been tried with some composition wheels with success, but they are necessarily very expensive, and on this account cannot come into general use."

"Will no other wood than boxwood answer?"

"Only for very cheap skates. Dogwood, apple, pepperidge, laurel, and lignum vitæ have been tried by almost every roller maker; and all have been rejected. The lignum vitæ alone is hard enough, but it will not stand the strain of the small axle. Metal wheels with a rubber surface are made, but nothing has yet been found which in all respects is as good for the purpose as boxwood."

PEOPLE who use warm water bottles and India rubber bags would find a bag of sand far more convenient. The sand should be fine, clean, and thoroughly dried, then put into a flannel bag, and the bag covered with linen or cotton cloth, to prevent the sand from sifting out. The bag may be quickly heated by placing it in an oven or on a stove. The sand holds the heat a long time, and imparts a more agreeable warmth to the feet or hands than a warm water bottle.