a jointed fishing rod, and supposing the cane, or a length of the rod, is just three feet, set it in the ground vertically, and if the sun shines, it will cast a shadow: now with a pocket-rule, you measure the length of the shadow, and find it, say two feet. Here then we have a right angle of two feet and three feet. Now measure from the base of the tree to the end of its shadow, and we will suppose it to be twenty feet. The problem, therefore, is simply this: If a cane three feet high casts a shadow of two feet, how high must a tree be to cast a shadow of twenty feet? Or, in other words, if two gives three, how much will twenty give? By the simple "rule of three" we find the answer to be thirty feet: Thus, by similar triangles, we have 2:3::20. X. X = 30 feet — the tree's height.

There is another method which has the advantage of being still more simple and convenient, by which the height of a tree may easily be determined by its shadow. Any person may easily measure the exact height of a tree when the sun shines, or during bright moonlight, by making two lines on the ground, three feet apart, and then placing in the ground, on the line nearest the sun, a stick that shall stand exactly three feet out of the soil. When the end of the shadow of the stick exactly touches the farthest line, then also the shadow of the tree will be exactly in length the same measurement as its height. Of course, in such a case, the sun will be at an exact angle of 45°, or just midway below the zenith and the horizon.

But the reader may now ask: Suppose the sun doesn't shine what then? Why, then set up the cane as before, say eighteen feet from the base of the tree. Now place your head on the ground, with the cane between you and the tree, moving nearer to or farther from it until you can just see the top of the tree over the top of the cane, then place a pebble or mark on the ground at the point where you obtain this view. The cane being three feet high, the distance from the pebble to it will be two feet, and from the pebble to the base of the tree, twenty feet, hence by the same rule, we find the height of the tree to be twenty feet, as explained above.

The following method, with a little practice, will enable any person to measure the heights of trees or other objects with approximate accuracy when the sun is not shining, and the method here given represents the simplest and quickest way to measure heights, though the results are not absolutely correct.

First make a mark on the tree or other object, say six feet from the ground, or place a pole six feet upright against it. Then walk away to such a distance that the breadth of the hand, held out at full arm's length, will just cover the six feet. Mark with the eye a point on the tree at the upper end of the six feet, and move the hand upwards and another breadth, and thus proceed until the whole height is measured. It may sometimes be convenient for an assistant to stand at the foot of the tree, and if with his hat on he will be six feet high, he may serve as a measure to begin with instead of the rod. It is well to stand at some distance from the tree in making these measurements or otherwise the upper measured portions will be larger than the lower on account of the "longer legs" of the imaginary triangle. If the distance be too great for the breadth of the hand, one or two fingers only may be used, or a short pocket rule. Or if the pocket rule be used, its separate subdivisions into inches may be made to indicate the portions measured, and the whole completed at one measurement.

The heights of perpendicular banks of lakes or other precipices, or the descent of a waterfall, have been singularly misjudged for the want of some such means of measurement as those described above. If the water of a lake freezes in winter, the ice forms an excellent base-line for the measurement of any of its shores or banks, and the tops of trees which grow upon them.

COIN SUBSTITUTES.

Norway even now uses corn for coin.

The skins of animals were the earliest forms of money.

In India cakes of tea pass as currency, and in China pieces of silk.

Sheep and oxen among the old Romans took the place of money.

Oxen form the circulating medium among the Zulus and Kaffirs.

Tin to-day forms the standard of value at the great fair at Nishni Novgorod.

In the retired districts of New Guinea female slaves form the standard of value.

Among some of the native Australians greenstone (jade) and red ochre form the currency.

Chocolate is still used in the interior of South America for currency, as are cocoanuts and eggs.

Iron spikes, six being a drachm or handful, are still employed in certain parts of Central Africa.

The archaic Greek money was in the form of thick, round lumps of metal, stamped with the given value.

According to Adam Smith it was not so very long ago that nails were used as a subsidiary coin in Scotland.

Whales' teeth are used by the Fijians, red feathers by some of the South Sea islanders, and salt in Abyssinia.

Old Chinese gold coins were in the form of cubes, while the bronze was shaped like knives and mining tools.

The Icelandic and Irish laws yet have traces of the use of cattle for money. Many Teutonic fines were paid in cattle.

In the early colonial times of 1652, tobacco and tobacco receipts were legal tender: corn and beans and codfish were also employed.

The small, hard shell, known as the cowrie, is still used in India, the Indian Islands, and Africa in the place of subsidiary coin.

According to Prescott, the money of the Aztecs and the nations in kin, consisted of quills filled with gold dust and bags of chocolate grains.

Before the introduction of coined money into Greece, skewers or spikes of iron and copper were a currency, six being a drachm or handful.

The Carthaginians had better money. Barbarossa, during his fight twith Milan in 1158, issued leather tokens, and so did John the Good of France in 1360.

In the British West Indies pins, a slice of bread or a pinch of snuff have all a purchasing power, while on the African coast axes are the accepted currency.

In 1652 during the early colonial times of America, musket balls passed for change at a farthing apiece, and were a legal tender for sums under a shilling.

Wampun was the commonest currency of all. It was the shell bead money of the Indians, and was soon accepted by the colonists as a convenient token.

The strangest coin of all, though, was the ideal money spoken of by the Montesquieu as being found in certain parts of Africa. It is an ideal money, called "macomite," but is purely a sign of value without a unit.

APHORISMS.

He surely is most in want of another's patience who has none of his own.—Lavater.

To endeavor to work upon the vulgar with fine sense is like attempting to hew blocks with razor.—Pope.

Prejudice and self sufficiency naturally proceed from inexperience of the world, and ignorance of mankind.—Addison.

One of the greatest of all mental pleasures is to have our thoughts often divined, even entered into with sympathy.—Landon.

Never be discouraged by trifles. If a spider breaks his thread twenty times he will mend it as many. Perseverance and patience will accomplish wonders.—Blair.

Our desires always increase with our possessions. The knowledge that something remains yet unenjoyed impairs our enjoyment of the good before us.—Johnson.

QUEER TRADES IN PARIS.

There are many queer trades in Paris. One of the oldest is that of "painter of turkeys' legs." This artist is known only to the poultry dealing fraternity and is a highly useful member of the community. By his artistic skill he enables the trader to palm off a bird of patriarchal age, with a certain vague romance as to the date of its creation, upon the misguided housewife, or even upon an experienced buyer, who has learned to judge a turkey after the manner of cookery book writers. Turkeys when freshly killed have shiny black legs and claws, but as the day of their death becomes more or less a matter of ancient history their lower extremities assume a slaty, dingy gray color. Old turkeys too, have long claws and horny looking beaks, which the ingenuous artist pares and varnishes. The artist goes round to his customers three or four times a week, paints the feet of the birds with his solution (which was sold as a trade secret to the present owner for £40) carefully pares the nails and beak, and there you have a turkey that will fetch half as much again. It is only during the desperate struggle with the ancient beast that ensues at dinner time that you realize how fraudulent are its pretensions to juvenility.

"Cat killers" are not numerous, but the few who monopolize the trade make a great deal of money out of it. They walk through Paris about midnight with a sack and a couple of terriers, and when their cats' sight of a stray puss off go the dogs, who seldom return to their master without their prize. Their skins are sold to furriers and their flesh to the keepers of eating houses in the suburbs, where "rabbit stew" is a favorite dish. But for stewed rabbit one likes to be satisfied that a bunny has been sacrificed, so the workmen who delight in this dainty require to see a rabbit's head as a proof of the bona fides of the dish. This would puzzle an ordinary individual, but the "cat killer" is a genius and a Frenchman, and is not so easily disposed of.

He also deals in rabbit skins, and has an arrangement with the cooks in the neighborhood to let him have the heads at the same time as the skins of the rabbits for his penny or two. By this ingenious method he is enabled to send out to his customers two or three cats' bodies minus the tails, with each rabbit's head, and one more dainty dish is added to the Parisian menu and eight or ten shillings to a well filled purse of the exterminator of the feline race. The French capital harbors the largest number of cats of any city in the world in proportion to its size. Whole colonies of them are to be found in the vicinity of the markets, where they feed on broken victuals and make incessant war on the rats.

At the Halles Centrales their numbers have increased so rapidly of late that a portion of them had to be destroyed, as they roamed about in bands like wild beasts, and were beginning to be dangerous. Duprez, the well known tenor singer, has earned the title of Le pere des chats, for he daily feeds hundreds of these animals at his own expense.