

## THE WEAVER.

The first time that the nest of the weaver of Bengal (*Loxia Bengalensis*) is seen, it is difficult to believe that it is the work of a bird. One would call it a piece of basket work skillfully manufactured by savages, and the use of which one would have to guess at. It is a sort of tube at least three feet long, tapering upward, closed at the top and open at the bottom, and alternately inflated and contracted. This sort of bag or purse, with several compartments, is woven from a dry grass crossed and recrossed in all directions so as to form a thick fabric with close meshes. The inflated parts, two or three (sometimes four or five) in number, are chambers that are occupied by the bird. The narrow parts are passages that put the chambers in communication. The nest is suspended from the branches of the highest trees (palms, Indian figs, etc.), especially from those that overhang a river or a torrent. It thus swings in the air like a vine, and its situation, along with the fact that its aperture is at the bottom, renders it inaccessible to snakes and birds of prey.

It is said that the separate chambers are so many nests successively constructed by the bird, one at the end of the other, each year; this may be so, yet it appears to us surprising that the points of junction are so completely invisible, and that there is absolutely no difference in the texture nor in the color of the materials.

The habit of weaving is absolutely innate in these birds. As soon as the nests are finished for the females who are about to sit, the males weave a nest for themselves. This has not the form of the nests destined to receive the eggs, but is an inverted cup, open at the bottom and provided with a pouch alongside of the orifice. Here the male remains and sings while his mate is sitting upon the eggs.

Another peculiarity of these nests is that glowworms are found fastened to the interior of them by means of clay. It is claimed in the Indies that these glowworms are placed there in order to serve as torches to light up the nest. According to the Hindoos, they are nuptial torches designed to guide the male through darkness to the dwelling of the female. It is probable that Oriental imagination has here given itself play, and that the worms serve rather as food than as a light for the birds. As for the presence of these insects in the nest of the weaver, there seems to us no doubt about it. As regards this, the following is the testimony of an Englishman worthy of credence who resided in India for a long time: "Wishing to ascertain for myself," says he, "what ground there was for this popular belief, I proceeded as follows: Knowing that the weavers absented themselves along about four o'clock in the afternoon, I located a person in such a way as to prevent them from returning to the nest, while I approached it. Upon opening it, I found within it a glowworm affixed to the side with a sort of clay. After sewing together the two parts of the nest, I replaced it. On the following day I again examined it, and found another and smaller glowworm in it fixed with clay alongside of the spot where the other one was found. I made the same examination of the three other nests, and in two of them I obtained the same result. In the third one, the new ball of clay was there, but I found no glowworm."

Let us add that, on the subject of the destination of these insects, the observer just cited inclines rather to the popular opinion. "It seems to me difficult to believe that the insect is put there to serve as food. Why should the trouble be taken to fix it thus to the side of the nest? The bird, moreover, is one which never leaves its nest after sunset, which loves the light, and which no one has ever seen taking food after nightfall."

The faculty of weaving nests is doubtless hereditary among these birds, but some naturalists think that imitation must also play a great role. It is certain, in fact, that great differences are to be found between the nests of the same species. This peculiarity would seem to indicate differences of talent among the various architects. It is supposed, too, that the rudest nests are the work of young or inexperienced birds.

To color white pasteboard the color of leather, soak in solution of copperas and then in ammonia.

## Professor Rucker's New "Divining Rod."

We have heard a good deal concerning the divining rod being used for finding underground supplies of water. The trick is a very ancient one, and lost nothing of its cleverness by being handed down for generations from father to son. The divining rod could find out where copper, tin, lead, zinc, or other metals lay buried below the surface of the earth, as well as discover water. The only thing that led to skepticism was that it professed to find too much. But, after all, the divining rod, made of a twig of hazel with a forked end, was perhaps the rude predecessor of the scientific instrument which Professor Rucker has just made known to the Royal Society; just as the rough Paleolithic flint instrument was the antecedent of the modern surgeon's lancet and the cavalry sword. Briefly, Professor Rucker's magnetometer is an adaptation of the well-known magnetic compass. It indicates the occurrence of subterranean strata lying beneath those which appear on the surface, if they are magnetic or contain much iron, as basaltic and many other igneous rocks do. Consequently, although this simple instru-

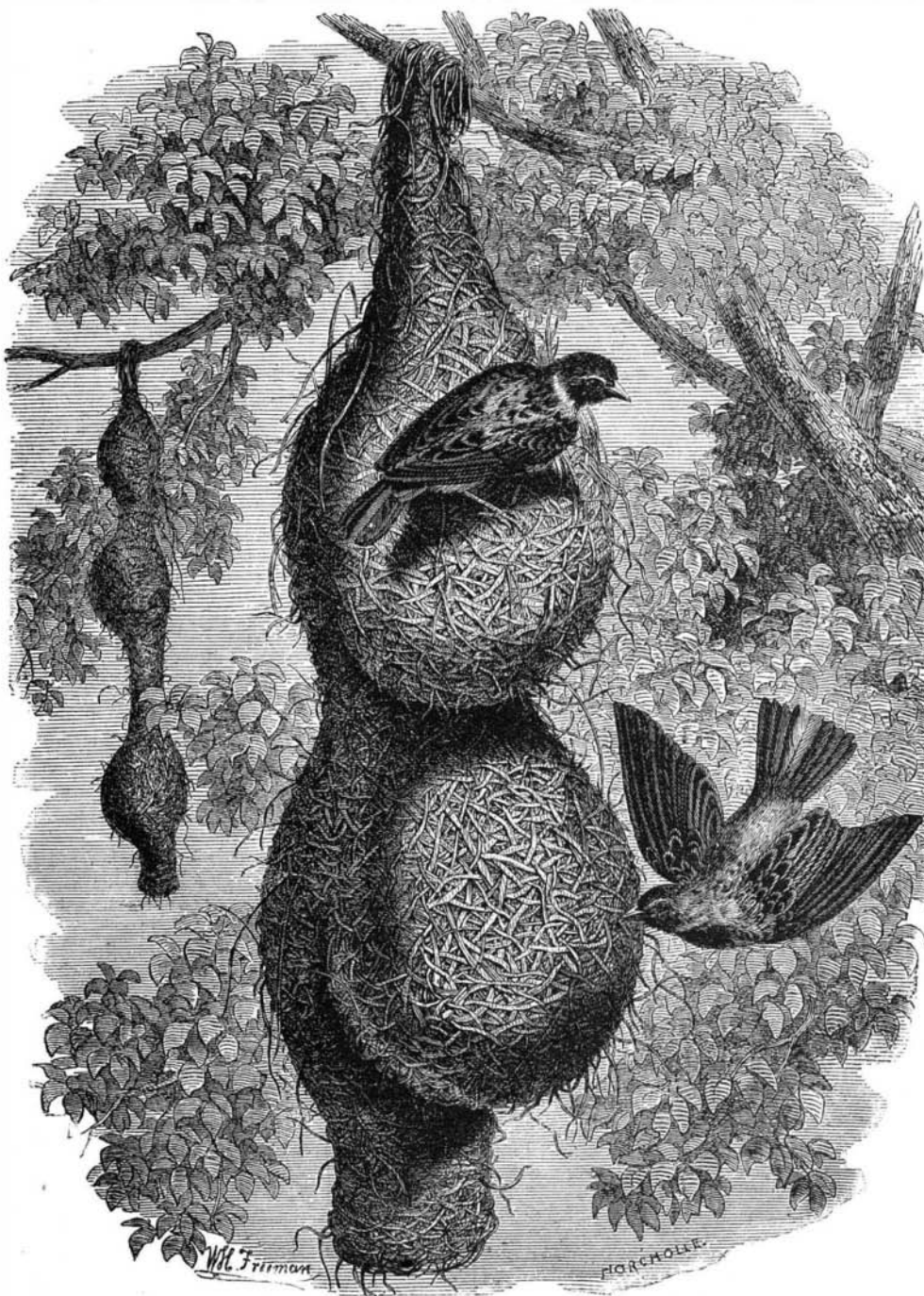
near the south of the Thames, running through the South Wales coal fields, was a line to which the magnet was attracted, especially near Reading. Professor Rucker is of opinion that the needle is affected by the direct magnetic properties of the underlying rocks, and this can only happen where iron is present in considerable quantities. How delicately the magnetic needle stands in relation to the iron-bearing underground rocks beneath any surface is proved by the fact that considerable effects might be produced upon it by rocks lying six or seven thousand feet below. Where such iron-bearing rocks are indicated to come up nearest the surface, coal can hardly be expected to be found; and, further, in those localities where the underlying rocks come nearest the surface, the downward pull on the magnetic needle was found to be very great.—*Sci. Gossip.*

## Where Wealth has been Created.

The place above all others where the wealth, business interests, and ability of the nation have been and are being created is among the rocky hills and pleasant valleys of New England. From there have gone the money and the brains that have built up and made successful the great coal and iron industries of the Middle States, the agricultural and mineral resources of the West, and the numerous industries that are at present being developed and populating the South. It is here that began the great textile and manufacturing interests, and the iron product that has spread all over the country from the North to the South, and the East to the West. It is here that have been reared and educated the men who have made the nation, a nation that is unsurpassed in intellect, education, industry, and wealth, and it is here that are to be found to-day the great factories, workshops, and hives of industry that are the parent stock of the great family scattered broadcast over the land. Think of this. Think what it is, what an honor and a blessing to point to this little section of a great country teeming with life and industry, wealth and happiness, and be able to say, there is my home, there is my heart, and there will I place my dependence. Is such a statement of facts, backed by every truth, and open to all for confirmation, not sufficient to convince the capitalist, the laborer, the home seeker, that here in New England is everything and all that can be desired? Look where you will, to the gold fields of California, they have failed to meet the expectations and have discouraged the hearts of those who flocked to them as bees in a swarm; to the farms and ranches of Dakota, Nebraska, and the far West, they, too, have proved a delusion and a snare; to the coal and iron mines of Pennsylvania, the miners are starving and dependent; to the sunny South, the latest El Dorado of expectant wealth and future greatness, where one succeeds a hundred lose their all, and in sad reflection upon their blighted hopes and wasted energies

they turn again and stretch out their arms in a longing and protesting appeal to the good old New England States, from which they went, and to which they would, like the prodigal, return, to live upon the fat of the land and enjoy the privileges and opportunities of their early days.—*The Manufacturers' Gazette.*

A RAFTING pin appears to be a very simple thing and of trifling importance, but it is not so inconsequential after all, when the number used annually is taken into consideration, and the amount of hardwood timber consumed in their production is understood. The Titabawassee and other boom companies in Michigan use millions of these little and simple devices, one pin being required to every log "tied out" by them; and the firms producing them use up whole "train loads" of logs in their manufacture. They are simply a wedge-shaped piece of wood with sufficient of the center of the wedge removed to admit the insertion of a small sized rope, so that when they are driven into the center of each log they cover the rope and hold it firm. When the logs thus fastened in strings reach their destination, a slight blow breaks the pin, loosens the rope, and permits the logs to be handled separately. It will thus be perceived that millions of these little devices are made and destroyed annually.—*Timberman.*



THE WEAVER AND ITS NEST.

ment cannot tell us if coal occurs deep down beneath, it can pronounce where it does not. In the important paper on "Coal in Southeastern England," read by Mr. William Whitaker before the Society of Arts on April 23, Mr. Whitaker had occasion to refer to Professor Rucker's recent discovery, and after the paper was read, Professor Rucker joined in the discussion. Professor Rucker and Professor Thorpe (of Leeds) have for some time past been noting the behavior of the magnetic needle in various parts of Great Britain, and they found that it frequently misbehaves; in other words, it is deflected in certain places from what would be regarded as its proper direction. The explanation is that the deflection is due to great masses of iron-bearing rocks, such as basalt, even when they are buried up beneath chalk and tertiary strata. Thus the new instrument has been the means of demonstrating hitherto unsuspected relations between the magnetic properties and geological characters of various districts. Professors Rucker and Thorpe have in this way proved that there was magnetic attraction along certain definite lines which run across England. One is from the Lynn Wash to the line of the Midland Railway between Hawes and Settle (in Yorkshire), a distance of one hundred and fifty miles. They further stated, with confidence, that a line from somewhere