

of our country, and consequently any records or facts connected with them have a charm both for the forester as well as for the general reader. Dr. Brown's book on "The Forests of England" is therefore far from dry reading, treating as it does of such well-known forests and parks as Sherwood, Epping, Dean, and the New Forests, Woolmer, Whitebury, Windsor, Malvern, Cannock, and Hatfield Chases, &c.

A good deal of attention is being directed at the present time to the preservation of our forests in their natural beauty, and we should hope that Dr. Brown's books will at least have the effect of sharpening the interest of those who have hitherto been indifferent about the works of draining and planting that are always ready to be put forward as improvements, but which are for the most part of a character that should not be allowed to be carried out without deep and serious consideration by those qualified to advise.

"French Forest Ordinance" is a book of a more practical character than the preceding, inasmuch as it deals more with forest treatment and legislation in France, nevertheless it contains much of interest. The following extract from Chapter III. will explain: "It has been mentioned that the forests were exploited at that time [middle of seventeenth century] on a system of exploitation known as *jardinage* or *foretage*. The method of exploitation so designated is that which is generally followed in the management of woods in England, and of forests in our colonies—felling a tree here and there, and leaving the others standing—and is called in French forest economy *jardinage*, or gardening, from its similarity to the procedure of a gardener gathering leeks, onions, turnips, carrots, cabbages, or cauliflowers—taking one here and there, not at haphazard, but with some principle for his guidance—it may be to thin them—it may be to gather in the mature, and leave the others to grow; and called *foretage*, or ferreting, from the similarity of the woodman's procedure in seeking out what trees to fell—to what is called, from the conduct of a ferret, ferreting out what is wanted when it does not at once appear."

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to insure the appearance even of communications containing interesting and novel facts.]

"Waterspouts" on the Little Bahama Bank—Whirlwind at Grand Cayman

WE have received the following communication, by an officer of H.M. surveying vessel *Sparrowhawk*, employed in the West Indies, from the Hydrographer to the Admiralty:—

Being much interested in the subject of waterspouts and their formation, and having failed to find anything about them in the works of recognised authorities, I venture to record some personal experiences together with what information I have been able to collect from the inhabitants of Alaco and the adjacent bays.

During the summer months waterspouts are common on the Little Bahama Bank. I have seen seven at once in water varying from ten feet to over a hundred fathoms, and I am informed that fifteen have been observed.

I have noticed that the first movement which eventually produces a waterspout is a whirlwind on the surface of the water gradually increasing in velocity of rotation and decreasing its diameter as it travels along before the prevailing wind. The spray is lifted to a height of from five to ten feet, and then gradually melts away, assuming the appearance of hot air, which is visible (still rotating) to a similar height above the spray. A motion amongst the clouds soon becomes apparent, a tongue is protruded, and the spout becomes visible from the top downwards.

On one occasion a portion of a spout appeared for a moment in mid air above the disturbance on the surface of the water.

Although these appearances are commonly called "waterspouts," I am informed by men who have been caught in them that they contain no water, and should be properly called "wind-spouts;" the small fore-and-aft-rigged schooners that ply on the bank do not fear them, although a prudent captain would probably shorten sail to one. I have been unable to hear of an accident having occurred through a vessel being caught in a waterspout.

They frequently cross the land, but no water falls; they take up any light articles, such as clothes spread out to dry, straw, &c., that happen to be in their course, but have never been known to carry anything along with them for a distance.

At Grand Cayman Island I noticed a whirlwind on the water, of somewhat similar appearance to those of the Little Bahama Bank just mentioned, though there was no cloud above it; the place where it appeared was a sheet of shoal water between the fringing reef and the shore, about one cable in breadth and three to ten feet deep. The whirlwind passed about fifty yards from where I stood; its estimated diameter was fifteen feet, and it whirled rapidly from left to right; the spray was lifted from the surface in a revolving sheet to a height of ten feet, but appeared to get thinner towards the top, and gradually melted away till it looked like the air over a boiling cauldron visible to a height of ten feet above the spray. I estimated its rate of progression at five knots; the wind was light (force 2). The whirling spray made a continuous hissing noise like a fast boat under sail passing close; it caused no particular wave on the beach and left no wake; its character was unchanged for half a mile, when I lost sight of it by its passing a point.

The inhabitants informed me that in their memory several whirlwinds had passed, but none had been known to cross the land.

MORRIS H. SMYTH

A Remarkable Meteor

A METEOR was seen at Hendon on the 6th inst., at 8.53 p.m., in a clear sky, and broad daylight. The course by compass was from north-east to east, at an altitude of about 27° above the horizon when first seen, and 22° when it disappeared, after being visible six or seven seconds. I drew the attention of a friend, in whose garden we were standing, to it. He saw it about three seconds, and compared it to a stream of fire. I learnt later that it was also seen by parties boating on the waters at the Welsh Harp, but could not get any particulars beyond the fact that it was seen. Its passage appeared attended by intense combustion. It first appeared as a circular ball of fire, but speedily lost a spherical shape, and became pointed, resembling somewhat a spear head, as though the change in appearance were due to the resistance of the atmosphere. From a deep red at first it became of a decided golden colour, to change to a brilliant white just before or as it disappeared. There was nothing special about the disappearance.

P. F. D.

London, W.

The Function of the Sound-Post in the Violin

I READ with much interest the part of Dr. Huggins's paper which relates to the above subject, having myself tried numerous experiments in the same direction. The conclusions I arrived at do not so much differ from those set forth in the paper, as that I venture to think they go a step further. It is on this plea that I ask for the acceptance of the following observations:—

It is undoubtedly true that the sound-post of a violin does communicate the vibrations from the belly of the instrument to the back; but, as will be hereafter seen, these vibrations are not of an order to reinforce the *sound* except to a limited extent. By far the most important function of the sound-post is that it acts as a prop to the belly in such a position and in such a manner as to enable the latter to give out a more resonant *order* of waves. The back may, and does, give out a modicum of sound, but it is especially the belly which becomes more resonant under the influence of the prop than without it.

In the first place, when the sound-post is removed, the belly of the violin is then an uninterrupted elastic table with a vibration rate of its own, its greatest elasticity being just at the part where the bridge is situated. Now it may safely be predicted, without resorting to experiment, that this specific rate of vibration of the belly itself will interfere with the varying rates of vibration communicated to it by the strings. That it is so, however, I have conclusively proved by actual experiments in great