tube, and the date of filling. Something more exact than the commercial name of the glass would be needed in stating the former, but both of these particulars might with propriety be engraved on the tube.

LEONARD WALDO

Yale College, New Haven, May 11

"How to Prevent Drowning"

ONE further hint may be added to those of Mr. MacCormac. It is as simple as practical, although it may not have been before recommended in print.

When a person is thrown into the water from an elevation the body sinks for a time, and may not rise quickly to the surface to permit fresh breath to be taken. In that case shut the lips firmly to prevent the escape of the breath, and swallow the breath. This is the art of the diver; it comes naturally to him when he seeks to prolong his stay under water; but it may not as readily occur to one unskilled in diving, whose only desire is to reach the surface. The act of gulping down the breath may be repeated three or four times, and thus protract the chances of escape.

Although every one may tread water, fresh or salt, Mr. Hill is undoubtedly right in saying that all cannot float upon fresh water without assistance from their hands or feet. Not one in ten can do so. When the swimmer shows his toes above the surface his hands are in constant action below, turning half-way round from the wrist and back again, to change the fulcriment.

WM. CHAPPELL

Stratford Lodge, Oatlands Park, Weybridge Station

THE bathing—I might almost say the drowning—season is now about to begin, and many lives will unhappily be lost. As the human frame, bulk for bulk, is lighter than water, all that is needful to save life is to permit the body to sink until it shall displace as much water as equals the body's weight. Then paddle gently, as the lower animals do, with hands and feet, the head being held erect, wherever it is desired to go. This direction being carried out is absolutely all that is needful under ordinary conditions to preserve life. These few directions ought to be stuck up in every bathing-place—every boating- and skating-place—in the three kingdoms. Children in every instance ought to be made to tread water from the earliest age, say in shallow slate baths with blood-warm water, or, when convenient and suitable, in some river, pond, or in the open sea. A leather belt with ring, and a stout rod with line and hook, are employed by Portuguese mothers to instruct their children. The mother, rod in hand, stands on the brink; the child learns in the water. In Paris swimming-schools the same procedure is resorted to. The business cannot be begun too soon. I saw mere infants sustaining themselves perfectly in the tepid waters of Africa. Treading water is far safer than swimming in a broken sea. Every adult, man or woman, who has not practised it should begin. Once the conviction instilled that the body is lighter than water, the risk of drowning is reduced to zero. The process involves no uncertainty, no delay. Very different from swimming, it can be acquired at once.

Belfast, May 25

HENRY MACCORMAC

Optical Phenomenon

MR. MURPHY'S experience, described in *NATURE*, vol. xxiv. p. 80, is general enough. It was observed by Fechner in 1860, and is now commonly associated with his name, though Prof. Brücke of Vienna had also seen and explained the very same phenomenon some years before that. Nor was he the first, for, according to Aubert, there is a still earlier account due to Brewster in *Poggendorff's Annalen* for 1833.

Fechner's side-window experiment, as it is called, is best seen by employing a scrap of white paper on a black ground, or *vice versa*, the eyes being accommodated for some other distance, so that double images of the paper are secured. Care must also be taken that the light from the window enters the nearer eye only through the sclerotic, so as to receive a reddish tinge. This diffused reddish light renders the eye after a short time comparatively insensitive to red, so that the light reflected from the white paper appears greenish, the black paper alone, from which no light is reflected, appearing of the reddish tinge. In contrast with this, in the other eye, which is sheltered by the nose from the window-light, the white light appears reddish, and the black greenish. Some little time is required for the illuminated eye

to be exhausted for red before the contrast is very striking. Such is Brücke's explanation; but who will explain to us this "subjective phenomenon of contrast"?

JAMES WARD

Trinity College, Cambridge, May 29

An Optical Illusion

IF your correspondent, Mr. William Wilson, will refer to vol. xxxiii. of the "International Scientific Series," page 86, he will find given by Prof. Le Conte a full description and explanation of the ocular illusion to which he refers in his letter (*NATURE*, vol. xxiv. p. 53). The explanation is identical with that given by yourself.

SAMUEL DREW

Chapelton, Sheffield, May 24

Occurrence of Neolithic Implements at Acton, W.

IT may interest your readers to know that I discovered, last week, on the surface of a field south of the Priory at Acton, an abundance of Neolithic implements, precisely similar as regards form, type, size, and material to those which occur so abundantly in the neighbourhood of Beer and Sidmouth, in Devonshire. They occur also on a large field on the hill at Acton, west of the Wilesden Railway, and are formed of grey or black chalk flints, which—or the implements—have been imported. On a field south of the Priory I found a flat, circular, grey, quartzite, beach pebble, derived possibly from the Bunter Conglomerate of South Devon, similar to those of the Dorsetshire and Devonshire coasts. Such pebbles are of frequent occurrence on the surface of the fields in the Neolithic districts of Beer and Sidmouth, and have been used as hammer stones and missiles. The association of this pebble with implements so like in every respect to those of South-East Devonshire is very remarkable.

The occurrence of palæolithic implements in the drift of Acton has been known for some years. They occur in remarkable abundance in the high level gravels of this locality as well as in the low level gravels of Hammersmith, and one cannot fail to find in newly-spread gravel examples of the minor implements, such as flakes, drills, &c., and occasionally larger implements. A series of the neolithic implements of Acton I purpose depositing in the Jermyn Street Museum. Their discovery at this locality confirms the conjecture I had formed that neolithic implements might occur in the Thames Valley, from having found implements of neolithic type in the drift, into which they may have got washed.

SPENCER GEO. PERCEVAL

21, Notting Hill Square, W., May 20

Birds Singing during Thunder

A THUNDER-STORM of great severity passed over us, travelling from west to south, between 4 and 8 o'clock p.m., May 28, and killing a man in the open air three miles from my residence. The thermometer stood about 70° all the while. During the storm, and even when the thunder-peals were loudest, the chaffinches kept singing, and the blackbirds' notes alternated with the thunder-claps. The rain was moderate, and as the air filled with insects and perfume, the swallows kept busily, skimming even while forked lightning was flashing. Horses in the fields however exhibited symptoms of terror.

J. SHAW

Tynron, Dumfriesshire

Fire-Balls

I HAVE read with great interest Prof. Tait's lecture on Thunderstorms, and have had recalled to mind a singular fire-ball which I had the fortune to see some years ago during a thunderstorm in Portugal. I have a perfect recollection of the phenomenon without referring to my journal of that date.

I was standing in a window on the second floor of the *Hôtel Braganza* (in Lisbon), which stands close to and high above the Tagus, and had an unbroken view of the river. There occurred a flash followed by an instantaneous crash, but the tail of the flash, however, gave origin to two balls, which descended separately and not far apart, towards the river, and when quite close to, or in contact with the water, burst in rapid sequence, with explosions which might have been the crack of doom.

Sumatra, April

HENRY O. FORBES

Sound-Producing Ants

IN *NATURE*, vol. xxii. p. 583, which has lately reached me, I read a letter from Mr. Peal on sound-producing ants, and I