passed the boat, which rose and fell to them as they swept on. Ahead was the small island near the north-west entrance to Oban Harbour; Kerrera Island was close on the right or starboard bow. The sea was so calm, there was no sign of wash on either shore. As the wave rolled in I watched it, and after a few seconds the white line of surf became visible and the noise of the same following told of its breaking on the rocks with some violence. It was not the wash of any steamer, as the boatman at first unthinkingly surmised, for in the first place it was too broad a dome of water, many of our boat's lengths, into which the few short waves even of the largest steamers could not resolve themselves; secondly, there was no steamer in sight, nor had any lately gone by, save the Duke of Argyll's steam yacht, which had passed near us more than half an hour previously.

Such a wave could not have originated in the narrow channel between Mull and the mainland, but must have come in from the Atlantic, and had its origin, I imagine, in some far distant submarine disturbance. I have seen a report in the papers of an earthquake in Jersey, and I am informed by some friends lately returned from Cornwall (near St. Michael's Mount), that on August 26, about 4 p.m., when watching a seine net being pulled ashore, a wave larger than usual—described as a long black line, seen for a long time—rolled in. Perhaps others may have noted similar waves at other parts of the coast, and been able to record the exact time. H. H. GODWIN-AUSTEN

Deepdale, Reigate, September 9

Salmon-Breeding

ON August 28 an examination was made at Lord Lauderdale's fish-rearing ponds at Howietoun into the condition of the young salmon and hybrid Salmonidæ, and with the following interesting results:—

A hybrid was taken from Pond No. 3 which measured 6·5 inches in length; it was one of about 190, all much the same size, which were raised from the eggs of the Lochleven trout fertilised from the milt of the American char, *Salmo fontinalis*, on November 15, 1882. The specimen was a male with the milt nearly fully developed; the fish would evidently have bred this winter.

A hybrid was removed from Pond No. 4 which measured 7·5 inches in length; it was one of about 90, and raised from the ova of the American char milted from a Scotch char from Loch Rannock on November 15, 1882. It also was a male with the milt as fully developed as in the preceding hybrid.

Segregation in these ponds has been most rigidly carried out, and the results show that trout and char, or two species of char, will interbreed and give fertile offspring. A few more months will decide whether the females are as forward as the males, and whether the milt itself is prolific or not so; also to what extent hybrids will interbreed.

A hybrid was removed from the Octagon Pond at Craigend which measured 6·5 inches in length; it was one of 212, and raised from the ova of the Lochleven trout, fertilised by salmon milt on December 24, 1881. It was a barren female; whether any will be fertile time will show.

A grilse was taken from the salmon pond at Howietoun which measured fourteen inches in length; there are a large number, but they are in too deep water to count. These fish were raised from the ova and milt of pure salmon taken from the Teith in December, 1880. The specimen was a female, with the ova well advanced, being 0·1 inch in diameter, and would have bred this season. This fish was well nourished, with eleven rows of scales between the adipose dorsal and the lateral line, and sixty cæcal appendages. This solves the question that our salmon may not only be reared in a healthy state in suitable ponds of fresh water, but also, if properly cared for, will breed without descending to the sea. Last year the milt of the pars from this pond were successfully used for breeding purposes.

FRANCIS DAY

Hydrodictyon in the Eastern Counties

IT may interest some of your readers to know that *Hydrodictyon utriculatum* (Roth), reckoned by Dillwyn among the rarest of the fresh-water Algæ, and now generally described as confined to the ditches and pools of the Midland and Southern Counties of England (W. J. Hooker, 1833; Harvey, 1841; Hassall, 1845; and Griffith's "Micrographical Dictionary," 1883), can again be claimed as an inhabitant of the *Eastern* Counties. A few days ago I found a fine and well-grown specimen in the river just above the well known sluice at Denver.

In the earlier half of the present century Cambridge seems to have been the centre for its distribution. Dillwyn, in 1809, relates that he received his specimen from the pool of the old Botanic Garden. Harvey, in 1841, says that he has fine specimens from Prof. Henslow, gathered in a pond in the Botanic Garden at Cambridge, where the plant has existed for many years. Hassall, in 1845, repeats Harvey's words, again on the authority of Prof. Henslow. Since that time it appears to have become completely extinct in this neighbourhood. The Curator tells me that two or three years back an attempt was made to introduce it into the pond of the new Botanic Garden, but without success. It is, I think, therefore worthy of record that this remarkable plant, so interesting to the biologist, has been lately discovered, apparently naturalised, at the bottom of the Ten Mile River, about twenty yards from the tidal waters of the Ouse.

The reappearance of Hydrodictyon on the fens round Cambridge is also interesting from the hope it inspires that, owing to the increased facilities for investigation now afforded by the University, further light may be thrown upon its singular cycle of development which, notwithstanding the labours of Areschoug, Cohn, Pringsheim, and others, must be said to be still somewhat obscure. J. C. SAUNDERS

Downing College, Cambridge, September 4

The Sky-Glows

THE sun-glow phenomena have entered upon such a fresh phase that I venture to send some extracts from my notes. It is not simply a renewal of the sunsets of last season, although that in itself will doubtless seem remarkable to those who have not noticed the almost constant occurrence of the "day glows" throughout the summer; the chief point is the radiating character.

September 11.—Glow 6.50 p.m. At 7 a vertical bar 2° to 3° across at base, to altitude 20°. Another at angle 45° to north; at 7.3 a third at angle 30° to north. The three faded at 7.5, 7.7, and 7.10.

September 12.—Sun seen to set by 6.20. At 6.35 ruddy tint above earth shadow in east; gone at 6.45. 6.50, fine glow from north-west to south-west, up to 30°; 6.55, very fine, up to 35°; much purple. Gradual change to low orange glow by 7.4, this fading by degrees, but partial return at 7.9; little left at 7.19.

September 13 (*sunrise*).—4.57 a.m., lovely orange glow and reflection in west. Cirri bright. 5.0, pink shot up vertically (in inverted pyramid) to height of Jupiter. 5.0½, bar at angle of 45° to north. 5.5, whole north-east to south east suffused, broken by dark bars, four to north, five to south, radiating from sun. Central mass now 5° to 10° above Jupiter. Cirri now dark at east, but slight tint near Venus (these proved to be higher and more feathery, the others about 7° or 8° above east by north, approaching to cirro-strati). 5.7, now five bars to north, seven to south. Light wider spread, now to level of Venus (roughly measured as 35°). Soon traces even to 45°. Bars *very* marked; one from east-north-east reaches north-north-east, at altitude about 22°. Low cirri now re-lit. 5.15, whole mass now barred; nine to north, and two new ones to south of centre, but lower part to south now gone. Cloud over Venus now re-lit. 5.20, going to west window find marked *counter-glow*, also barred, radiating from perspective just like bands of cirrus, yet marvellously clear sky. Four dark bands to south, five to north, wider than those seen in east, and definition much less distinct. Rosy tints now gone. A ruddy tinge almost from south to north above earth-shadow, *except just south of due west*, whence rose a broad dark vertical bar. Faint cirri to south now lit up. 5.28, bars to north and south still visible, and no glow above earth-shadow at anti-solar point. Glow lasting at 5.30. Cirri in east quite dark again, but the cirri near Venus and to south white. Former now in vertical lines, but upper edges blown in wisps towards north. 5.40, stratus low in east by south. A greenish cast given to Venus and Jupiter when the glow strongest. Rosy glow at times noticed during the day. Sun rose about 5.50.

Sun set before 6.20.—6.35, ruddy tinge along east horizon, keeping above earth-shadow as it ascends. 6.45½, cirro-stratus 5° to 10° above horizon, due west again lit up bright (first at 6.30) for two or three minutes, quickly followed by rosy glow in clear sky, as three central bands, divided by narrow dark bars,

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