JAN.

mould, thus nailing herself down inch by inch to the ground and enabling the vigorous shoots at her head to get a good foot-hold and stand erect some inches away from where in her day she stood and flourished.

The first step made, then, in locomotion by the individual plant is by branching dichotomously, and the second is by rooting laterally as in the overweighted stems of L. lucidulum. This second mode of land-grabbing is an important advance on L. selago and leads to the formation by a single plant of extensive colonies, say a yard in diameter. At first the plant, rooted at the base, grows erect for a term of years; then it begins converting the lowest length of its stem from an upright leafbearer to a prostrate root-bearer. The next step in the division of labour is to make these successive acts of the vegetative and the locomotor simultaneous.

The beginnings of this advance are seen in L. inundatum; the stem is weak and prostrate and creeps along from 2 to 4 inches a year by thrusting rootlets into the sand (or peat) at its growing tip; in fact, it walks along by loops like a geometrid caterpillar or the Walking-leaf Fern; soon after the part beyond the root-anchor has found its sea legs, so to say, the brittle stem severs connection; the growing tip is cut adrift and left to steer a course for itself. It is not often that you find a plant more than 5 inches long and it may have 2 or 3 secs of roots on its creeping stem; the stem, meantime, carries on the vegetative function and is closely fringed with small leaves all along and all round-though those on the under side curve upwards for light and air. The stems also branch laterally 3 or 4 times in their few inches of length; some of these branches are weak and prostrate, rooting at their tip, but one at least (usually the first) is strong and erect, surmounted by a terminal fruiting spike.

The other species which stand higher up in the scale of evolution have stems that are regular runners and extend for vards, sending out at intervals more or less complex systems of lateral branches for vegetative and reproductive purposes. In one species (L. obscurum or dendroideum) the running stem is subterranean and destitute of leaves; in the other three (L. annotinum, L. clavatum and L. complanatum) they are surfacerunners and more or less leafy.

Throughout this course of upward progress the Club Moss may be regarded as attempting by various means to make its way over the ground. From this point of view, the production of a horizontal runner is the most important step in the whole line of advance, since it enables the plant to throw out branches and fertile shoots laterally at various points without interfering with its continuous forging ahead. On this principle of classification