

of more or less free perspiration, on the part of the rider, a condition of which the beneficial results both in health and disease are now becoming more generally appreciated. Typical cases, then, of the therapeutical usefulness of cycling are those in which the movements of the ankle or the knee-joint, and even to some extent of the hip-joint, have been impaired by chronic thickening of the tissues in or around those joints; and it is noteworthy that the advantages of the higher gear [in such cases as these is specially noticeable. In the low-gear machines, of course, the pedal has to move more or less rapidly up and down in order to propel the machine. The higher the gear, in moderation, the larger is the circle described by the foot on the pedal, and thus the slower is the movement necessary to attain the same rate of speed as on a low-gear machine. The advantages of a wider circular movement of the foot and leg in obtaining a greater play of ankle and knee will be evident to all; and the fact that the movements are also more slow is a further and obvious advantage to the rider whose joints are more or less crippled and defective in mobility. One or two typical cases may be quoted.

A man, aged twenty-two, after an acute attack of rheumatism was left with considerable thickening of the left knee and ankle, and after some weeks of active treatment by stimulating liniments and massage, the want of power and the diminished freedom of movement still remained noticeable. His general health was also suffering considerably from the want of active exercise in the open air to which he had all his life been accustomed, and his digestion and nutritive processes were steadily depreciating. He was then advised to commence cycling, as evidently the simplest means of affording him the exercise he required. At first his movements were very cramped, and he mostly employed the right leg in propelling the machine, but after only two or three rides he found that the left ankle lifted up, round, and down on the pedal on which it rested, describing, therefore, a circle with each revolution of the wheel, was becoming much more supple than before, and a few days later he found the same result was taking place in the left knee joint. He experienced at first considerable pain in both joints, but this gradually lessened, and, as it went, the swelling around the joints became less evident, and the muscular movements became gradually stronger. Coincidentally with the increased movement, the circulation through the limb became more active, and this undoubtedly increased the rapidity with which absorptive processes took place.

At any rate, the joints became more and more supple, and in less than three weeks after he had commenced to cycle they appeared to be almost normal in mobility. At the same time he had gained nearly 6 lb. in weight; the anæmia which

was so pronounced at first had disappeared, he was eating and sleeping well, and was practically free from pain. In other cases of a similar character improvement was not so rapid, although it was, in the end, equally good; but these latter patients were neither expert cyclists, like the one whose case has just been described, nor had they been previously accustomed to, and were, therefore so dependent as he felt, upon active exercise and fresh air. The same results in greater or less degree have been observed during the last few months in patients who had sustained fractures of the leg, and in whom a marked degree of stiffening of the ankle and knee joints remained after the bone had firmly united. But in every case the results of the exercise were so good and so comparatively rapid that they were evidently dependent upon the cycling.

## Poisons.

### ORGANIC.

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No. V.

TABLE I. (continued).

#### *Aconite and its Preparations.*

The root of *Aconitum napellus* (Natural Order, Ranunculaceæ), collected in the autumn, from plants cultivated in Britain. The plant grows in several of the countries of Europe. At one time, the leaves and flowering tops were official, and were used for making an extract, but now only the root is recognised. The plant is commonly called monkshood; in some parts of the country it is known by the name of wolfsbane; in Ireland as blue rocket. The reason for collecting the root in the autumn, when the stem and leaves have died, and before the fresh ones appear, is that the loss underground is in proportion to the growth above ground.

The root is 2 to 4 in. in length, and from  $\frac{1}{2}$  to  $\frac{3}{4}$  in. in diameter at the upper extremity, gradually tapering to a fine point. It is dark brown in colour, internally whitish.

Horse-radish root resembles aconite root, but it is generally much longer; it does not taper to such a fine point. It also has a pungent odour, increased on scraping, while aconite has no odour, and on scraping turns pink; horse-radish remains white. The root contains the alkaloid aconitine, picroaconitine, and aconitic acid, resin, and fatty matter.

The aconitine itself is official; it is a colourless crystalline substance, obtained for official use from the root. We shall speak more fully of its preparation when treating the subjects of alkaloids. There is a tincture of aconite, the dose of which is 5 to 15 minims, or, for repeated administrations, 2 to 5 minims. There is a liniment, which is the best-

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