## Sand versus Peat for Ameliorating Clay Putting Greens

There is perhaps little difference in opinion as to what should be the ideal texture of the soil of a putting green, albeit there is difficulty in stating this condition in words. Clay is more or less like paste when wet, and somewhat akin to brick when dry; sand has no springingss whether wet or dry; peat is always spongy. Rolling either sand or peat as firmly as possible does not materially change them. There is pretty general agreement that a loamy soil is best for putting green purposes; but this must necessarily be firm enough so that no heel prints will be made. A mixture of elay and sand, or of elay and peat, will give a texture approaching that of a true loam. The true loam, however, is most desirable, particularly as it will produce better turf. Even on a true loam soil much of the consistency or "feel" of a putting green is due to the turf. It is perhaps not an overstatement to say that a clay putting green carpeted with good turf is preferable to a loam putting green covered with thin turf. In short, the springiness, consistency, "feel," or whatever one may choose to call it, is due quite as much to the turf as to the soil. Good turf or good leamy soil is probably as near to the ideal as we shall ever approach.

All of the above is preliminary to answering the question "Is peat or sand preferable to modify the texture of elay soil on a putting green?" The answer at the present time would be emphatically in favor of sand. Peat, thoroughly mixed with elay soil, certainly modifies its texture; but it also very often increases the difficulty of growing good turf. If a elub has a peat deposit on the course, but no sand, it could perhaps afford to experiment with the peat. No elub, however, can afford to buy "commercial humus," as the price is far above any possible benefit; often, indeed, the results are distinctly harmful.

To sum up present conclusions, either peat or "commercial humus" has exceedingly little value as a fertilizer. While both will modify the texture of the soil, they also make the growing of good turf more difficult. Sand is the best substance to ameliorate the texture of clay soils. Cokebreeze is also excellent, but usually not as cheap.

## Portable Pump for Watering Greens

The use of a portable pump for supplying water to greens where the existing piping system is inadequate was tried out successfully during the season of 1923 at the Tuxedo Golf Club, Tuxedo Park, New York. Mr. Griswold Lorillard, Chairman of the Greens Committee of the club, writes that the pipes of their sprinkling system, installed as long ago as 1897, are inadequate, having become somewhat clogged. There is a stream of good size running through the club's property, and Mr. Lorillard conceived the idea of using a portable pump so as to obtain water from the stream at points where needed. With this in view the club purchased a portable fire pump, such as is on the market for use in fire-protection of forests, lumber camps, mills, country clubs, etc. The experiment with the portable pump at the Tuxedo course has been highly successful. During the dry spell of the summer, while neighboring courses were suffering from lack of water, at the Tuxedo course the pump was carried about on an ordinary motor truck to points on the stream near the respective greens, and the turf on greens and tecs kept