These three machines have been designed to remove all the thatch, thus stimulating recovery and growth of strong healthy grasses. You will find that each machine will clear the difficult, dead, matted, fibrous grass that is so often so difficult to get rid of.

We have a machine for every purpose from the small golf green to the largest Municipal playing fields. One great labour saving device we have fitted on our P.V.R. model is the very large glass fibre collecting box which saves an enormous amount of time and energy that would otherwise be wasted in sweeping up afterwards.

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The British Golf Greenkeeper

CONTENTS

SAND SLITTING 5–7
WAGES GUIDE 11
THE GREENKEEPERS 17
NEWS 20–25
LEASING 25–29
SECTION NEWS 32–36
TESTING THE SEEDS 36–38

Front Cover Picture
Slitting turf on a golf course to cure water logging and improve drainage.
The final touch of pride on a fine course

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OF THE many novel ideas which find their way into the news columns of sportsturf magazines few will ultimately end up as standard turf management practices. So often the rigours of practical use under severe conditions in the field identify weaknesses in an initially hopeful and promising proposition. One idea, however, which appears to be gaining popularity and standing the test of time is "sand slitting"—a technique for dealing with waterlogging in turf.

To describe it as a new theory would perhaps be inaccurate for it is said that the Romans did it—and who knows where they got the idea? However with an intervening gap of almost two thousand years credit must be given to those who latterly have built around the idea a sound scientific basis of design and established the sophisticated technology necessary to make the technique widely available for sportsturf application.

An early installation in this country, reported in the Journal of the Sports Turf Research Institute No. 46, 1970 was carried out at Twickenham by Mr. H. E. Clark in 1966. Research into the design and functioning of vertical drainage channels, or slits and the development of scientifically based systems for sportsturf use has been assiduously conducted to the great benefit of all concerned with turf management, by Dr. Victor S. Stewart, Head of the Soil Science Unit, University College of Wales, Aberystwyth. He, with his colleague Dr. W. A. Adams has led the vanguard of opinion and development in this new field. Early successful work completed at Cardiff Arms Park and elsewhere attracted the attention of Chipman Ltd., of Horsham, Sussex, a firm already offering products and services to the sportsturf market, who were keen to develop these ideas commercially. This firm is now providing a comprehensive contract service in turf drainage based on the new principles established, and prominently featuring schemes for golf courses.

Basically the object is to overcome waterlogging in soils so finely textured or lacking in structure that they are incapable of transmitting water at an acceptable rate to the drains. If water cannot be removed through the soil itself some means must be provided to shed it from the surface. Here is where the sand slits come into play by intercepting excess water at the surface as it falls and conveying it laterally to the drains. Obviously it is important that the sand slits should intersect clean backfill over the drains so that they can discharge the collected water rapidly and a continuously permeable link can exist between the surface and the drainpipe. From a knowledge of the hydraulic conductivity, or water flow rate, of the materials used in backfilling a target design rate for the whole scheme can be arrived at. This is part of the technical service which Chipman are giving. They survey the site, checking levels and the condition of existing drains, sample soils for detailed mechanical and chemical analysis, and then prepare a comprehensive report and proposals. Slit dimensions, layout and intensity are all calculated in relation to materials employed and drain spacing to quantify the potential discharge rate suiting rainfall conditions and frequency of use.

Having the right machine for the job is vital and Chipman own the exclusive U.K. rights to a patent pending on the technique of "sand injection", developed initially by Cambridge Soil Services Ltd., by which a number of [Turn to Page 7]
Scientific analysis of your soil enables us to:

- Eliminate Waterlogging
- Improve soil structure

By the New Deep Penetrating SAND INJECTION technique.

Establish precise fertilizer requirements and Provide YOU with the complete prescriptive Turfcare Service.
Sand slits are “injected” simultaneously into the turf, without the need for spoil removal, and with minimal disturbance of the turf surface. They operate nationally with teams carrying out installations by contract in all parts of the country and many first class professional soccer clubs have taken advantage of the service. Machinery for use on the fine turf of golf greens is already available, and many greens, as well as fairways, have been successfully drained.

Chipman stress the importance of sand slitting as part of an integrated system of drainage consisting of “cut-off” drains where necessary to isolate the site from extraneous water, an intensive pipe system with correctly selected grades and depths of permeable backfill, and the slits giving the final close grid of interception channels at the surface. Sand slits can only be used alone where the subsoil is sufficiently permeable to function as an effective soakaway—a condition rarely encountered, or if they can reach through to a permeable raft featured in construction.

Unlike so many traditional drainage systems based largely on agricultural principles unsuited to compacted soils under turf, these schemes appear to really work. Maintenance has to be directed to keep the slits open to the surface, that is not capped by soil, and so receive water swiftly. Two ways are suggested: The first is to top-dress annually with fine sand, and the second is being worked on by Chipman at the moment; that is a device to instal a very close series of shallow “mini-slits” at right angles to the main slit system so as to remake the contact between the slit and the surface when renovating worn areas.

This is one new idea which may well earn itself a permanent place in golf course management techniques.
Quick-change artist

The Ransomes-Hahn Tournament Triplex is a remarkable machine — so remarkable that we call it the world’s first Greens Management System. The Tournament Triplex is a 12hp vehicle with hydrostatic drive, which powers four separate turf maintaining operations. Each conversion, from superb greensmowing to utility mowing, to Verti-Cutting, to spiking takes less than a minute — and no spanner!

**Greens Units** A full 67” cut. Each 23”, nine-bladed cylinder can be lifted individually.

**Utility Units** Heavy-duty cutting cylinders and bottom blades for approach and tee mowing. Grass catchers provided with all units.

**Verti-cut Units** Patented twin offset blades remove ‘thatch’, keep greens in play even in difficult conditions.

Ransomes-Hahn Tournament Triplex
When an advertiser tells you that a conversion is quick it's customary to take it with a pinch of salt. But this time take it as fact. Trying is believing, and you can try it for yourself at your local Ransomes dealer! You simply pull the connecting pin and quick-couple cable, remove the existing unit, and slip the selected unit into place. It takes less than a minute! Honest!

Tournament Triplex
Greens Unit
A full 67" of cutting width with the exclusive features of variable speed cylinder drive, giving you a cylinder speed completely independent of ground speed. Units may be operated one-down, two-down or all-down.

Tournament Triplex
Utility/Tee Units
Triplex utility units use same seven-blade design as greens reels, but have heavier fairway blades to withstand approach and tee mowing. These units are ideal for approach maintenance and the precision cutting of tailored tees, and can be adjusted down to 3/4" for greens-mowing after top-dressing.

Tournament Triplex
Verti-Cut Units
Verti-Cut units use durable, yet thin offset blades to remove thatch and grain as they begin to form. With 67" of cut (the Verti-Cut units are the same width, work at the same speed, and use the same grass catchers as the greens and utility units) and a riding vehicle, these attachments are ideal for preventing the development of thatch etc., lessening the need to take greens out of play for renovation. Variable-speed cylinder drives provide high tip-velocity even at low forward speeds.

Tournament Triplex
Vibra-Spiker
Vibra-Spiker reels use gentle high-frequency vibration to achieve deep penetration, without excessive weight, even when ground is hard and dry. Spiking (summer aerification) provides root pruning and moisture absorption, relieves surface compaction, and conserves fertilizers and fungicides by getting them immediately to the root zone. Full 67" swathe and Triplex speed make spiking a task that now takes even less time than greensmowing. Spiker penetrates to depth of 1 1/2".

Ransomes-Hahn
Tournament Triplex
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For expert help and advice with their game, most club members have a professional to turn to.

But who can a green keeper turn to for help in keeping his turf up to par?

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It works wonders with grass.

It comes in the form of mini-crumble granules which makes it easy to spread.

It also stays where it’s put, releasing its goodness slowly into the soil to strengthen grass growth.

For stronger, greener, cleaner, healthier turf, try SAI.

All enquiries to the manufacturers or to our accredited suppliers for England and Wales:

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Telephone 60341/5

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