ready to put out the next night. A system like this can be installed for around £1500, as against an average cost of around £8000 for a fully automatic pop-up system.

Fairways watering

Watering of selected areas of the fairways is now becoming more popular in this country and although on overseas courses pop-up sprinklers are installed to do this job, in this country it is more usual to use an above ground sprinkler.

Again a large output sprinkler is very useful for this purpose, and the most suitable one from the Cameron range is the ZK30WS. This has a cast distance of 75ft. and requires a flow rate of approximately 1000 g.p.h.

Water when you want it

by

Watermation Limited of Godalming

Watermation was founded 2 years ago to provide a complete design and installation service for automatic 'pop-up' water systems for all turf areas with the main concentration being the designs for golf green watering. This Company deals with all matters concerning the project from the surveying of the Golf Course, negotiations with electricity and water boards right through to the complete installation. Their technical advice is freely available to all with watering problems. It is very imporatant if your Club is considering improvements to its water system or even the installation of water to the greens for the first time, that such a firm is consulted even if it is only intended to install a manual watering system at this stage. Eventually most clubs will have automatic systems and therefore the pipework network should be installed to meet this future requirement.

Watermation systems for greens watering utilise commercial type 'Pop-up' sprinklers of very robust construction being manufactured from bronze and cast-iron. These sprinklers are mounted flush in the turf around the periphery of the green and spray water on to the green at night time under automatic control from a centrally mounted programmer. This programmer can be erected in any convenient position for the greenkeeper's use and will enable him to set up a watering cycle to completely suit the characteristics of the golf course, it having independent timing from 0 – 60 minutes for each green. In addition to the automatic control which is operated by a time clock incorporating both a time and calendar wheel, there is a patented rainstat which automatically turns off the sprinkler system when it rains and then permits the controller to commence normal operation when the turf needs water without any resetting.

SPORTS TURF RESEARCH INSTITUTE

The 21st A.G.M. of The Sports Turf Research Institute was held at Bingley on Monday, 24th April under the Chairmanship of Mr. Alan Sowden.

In its reference to research during the past year, the annual report (which was adopted) points out that the Institute is the acknowledged merit testing centre for amenity grass varieties in the U.K., and that currently over 200 varieties are in trials. The flow of new material is all the while increasing. In spite of this, however, and the fact that amenity grasses account for 33% of the value of grass seed used in the U.K., there is still no official recognition of, or support for, this work. Equally, there is increasing awareness on all sides of the need to develop mixtures for hard wear under sports conditions and for low maintenance in general amenity areas. The Institute has plans for extending its work on these aspects and developing extension trials on other areas, but lack of staff and financial resources prevent much of this widely needed research from being undertaken.

The Director also reported that, at the suggestion of seedsmen representing some of the main turfgrass breeders, the Institute is forming a Turfgrass Trials Committee, with strong represen-

tation from users of amenity grasses, as well as from the seed trade. It is hoped that the new Committee, for which invitations have already been sent out, will help the Institute in making its research policy as effective and valuable as possible.

Other research work included trials with fungicides and herbicides, the development of techniques for testing fungicides under controlled conditions, investigations into some aspects of disease resistance, the control of annual meadow grass and studies of soil permeability.

The advisory service continued to operate for the benefit of subscribing sports clubs, golf clubs, schools and parks departments, etc. and there was an increase of 5% in the number of advisory visits made during 1971.

A total of 128 greenkeepers and groundsmen, etc. attended instructional courses held in spring and autumn.

Financially, the Institute, which is a non-profit organisation, usually manages to break even, more or less – during 1971 there was a deficit of £348.

Automatic Golf Course Watering

by

Wright Rain

What are Pop-up sprinklers?

Pop-up sprinklers provide the most sophisticated labour saving and precise means available for the planned irrigation of grass playing surfaces.

Irrigation systems can be designed to apply appropriate amounts of water for varying soil conditions to any size or shape of area by using the right sprinklers at the right intervals.

Precision watering is carried out at night when playing surfaces are not in use, transpiration losses are low and wind-drift is reduced.

Most Toro pop-up sprinklers are gear driven rotary models. Some may be adjusted to water virtually any part of a circle, whilst others are pre-set to cover a full, three-quarter, half or quarter circle.

The Toro range embraces sprinklers to cover radii from 8ft. to 155ft., operating at pressures from 25 to 100lbs./sq. in. and applying from 0·25in. to 0·57in. of water per hour.

New additions to the already comprehensive range are the 620 and 640 series.

Automatic control

The 'brain' of this type of system is an automatic sequence controller. A programme of automatic watering is set on this unit and can be varied at any time in a matter of seconds.

The time the watering sequence is to commence is set up on the controller for the late evening – after the last player has reached the 19th! Whilst it is usual for the programme to be set for nightly watering, days can be omitted from the watering sequence to provide watering every other night if required, every third or fourth night, once a week or even once a fortnight.

The sequence controller starts and stops the electric pump automatically, as well as opening and closing the solenoid control valves. Each green has its own solenoid valve installed in an underground hydrant box which is usually situated at the rear of the green. After some experience with the system the head greenkeeper soon learns the length of watering time required for each individual green and sets the controller accordingly.

When the installation is completed and brought into operation, the soil is brought to 'field capacity' as soon as possible, i.e. moist from the surface down to the sub-soil. Thereafter the system is used to apply only sufficient water to make up for the moisture loss daily. This 'topping up' process therefore requires only a short application of water at a slow rate every night. Moisture loss due to evaporation is negligible as watering is carried out during the hours of darkness.