industrialist, financier, soldier and athlete are touched upon.

Many pros know Young as a fellow of astounding energy, resiliency and resourcefulness. But that he is the employer of 8,000 men with several huge factories in the United States and Canada and that he is a dominating figure in the steel and wire business may have missed their attention; perhaps because he hasn't mentioned it to them.

The News' story doesn't tell what a putting magician this Young is, but a hundred or more pros who have played golf with him can tell you that.

While you're wondering about ideas to make your club attractive to each member of the entire family this year, have you thought about having a junior group organized within your club?

Junior organizations, with their own officers and meetings, subject to adult supervision, have been lively and successful at many clubs. The youngsters plan and conduct their own golf and social events.

Connecticut section of the PGA has named the Farmington CC, where Art Reid is pro, as the venue of its Pictorial Review women's championship.

This tournament is a national event that gives pros a fine chance to boost women's golf, and with club schedules now being made up for 1936 it's high time sections that have not named state qualifying courses get busy.

Qualifying rounds are to be held at each club having entrants for the contest on May 7, to determine which women will represent the club in the sectional championships. The sectional championships will be played May 21 in PGA sections all over the country. Qualifying rounds and sectional finals will be played on handicap basis.

Information on the courses selected by PGA sections should be sent without delay to George Jacobus at his winter club, Sarasota, Fla.

Turf authorities have expressed fear that the severe winter may result in extensive winter-kill in the northern part of the Bermuda belt.

USGA Green Section staff already is working on plans for offsetting and repairing the expected damage and, if the threat materializes, expects to be in position to render expert advisory service to damaged courses of USGA member clubs.
After a winter like this last one, Roseman rolling with mowing is more than ever essential to fairway turf.

EVERY ROSEMAN OWNER IS A ROSEMAN BOOSTER

- Nominal Cost of Upkeep
  "The Roseman Mower purchased in 1925 has been perfectly satisfactory both from the standpoint of work done and nominal cost of upkeep. When the time arrives for replacement, it will be a Roseman."  

- Smoother Job on Fairways
  "We have used a Roseman mower for 7 years. It does a smoother job on our fairways than any other mowing equipment we have used. Maintenance cost is very small. There is no reason why, with common sense care, our Roseman will not serve for several more years."  
  E. G. Dollmeyer, Woodridge Golf Club, Lisle, Illinois

- Perfect Condition—Minimum Cost
  "Our first introduction to Roseman equipment was in 1921 for the old Port Chester Country Club. Our new course, the Tamarack, is longer and more rolling, and Roseman mowers keep fairways and rough in perfect condition at a minimum cost."  
  Geo. E. Mertz, Chairman, Tamarack C.C., Port Chester, N. Y.

- Have Proven Better
  "We have used Roseman Mowers continuously since 1929. We have tried at least three other makes of mowers and found that Roseman mowers have proved better and last longer than any of the others."  
  C. L. Brock, Supt. of Parks, City of Houston, Texas.

- Will Replace with Roseman
  "Roseman mowers in use since 1924, have kept our 18-hole course like a park. When they are worn out, we will replace them with more Rosemans."  
  J. F. Dorman, Indian Ridge Golf Course, Hobart, Indiana.

- Finest Fairway Equipment
  "Our fairways are the finest in this district due to the rolling our Roseman mowers afford. You have—and I speak from a standpoint of actual use and comparison—the finest fairway equipment available."  
  E. A. Vrooman, President, Realty Golf Corp., Guilderland, N. Y.

- Best on the Market
  "We have been users of Roseman fairway mowers since 1925 and feel, from our experience, that they are the best machines on the market."  
  Karl F. Abbott, Director, Sagamore Club, Bolton Landing, N. Y.

- Ahead of Wheel Type Mowers
  "A Roseman roller mower is way ahead of wheel type mower—for on soft ground wheels cut and gouge the fairways and in sandy soil they sink too deep and haven't enough traction."  
  T. R. Michaelis, Manager, Little River Course, Marinette, Wis.

- Efficient and Sturdy
  "Having used the same Roseman mower for seven years, I can honestly testify to its efficiency and sturdiness. It can stand a lot of hard wear and tear at high speed mowing. I don't know of any other machine that will do this without a big repair bill."  
  Horace Fulford, Supt., St. George's Golf & Country Club, Stony Brook, Long Island, N. Y.

- Excellent Fairways in One Season
  "This course, a 160 acre layout, was built seven years ago, but prior to our taking it over in 1933 had lain dormant for several years, so a crop of hay had to be cut with horse drawn mowers. That left a lot of stubble and tufted spots. Roller type units seemed the logical solution so we purchased five Rosemans. In one season our fairways were in excellent condition."  
  O. W. Le Sueur, President, Maple Crest G. & C.C., Somers, Wis.

• ONLY A ROSEMAN GANG

Thanks for telling the advertiser you saw it in GOLFDOM
• No Repairs

"We have used our Roseman equipment since 1930 in cutting approximately twenty acres of grass at our institution and have had no repair work."

S. C. Du Rie, Gardener,
New Jersey Reformatory, Rahway, N. J.

• Service on a Hilly Course

"We have had the Roseman Mower in constant use for two entire seasons. This course is very hilly and a lot of stones are continually coming to the surface and we consider it very hard use for any mower. We are entirely satisfied with the service this mower has given us."

W. C. Hull, President,
Tupper Lake C.C., Inc., Tupper Lake, N. Y.

• Good Service—Reasonable Cost

"Since 1926 we have been using in the Union County Park system three sets of five gang units and one set of three gang units. In all cases this Roseman equipment has given us good service at a reasonable cost for repairs and upkeep."

W. H. Bowles, Supt.,
Union County Park Commission,
Elizabeth, N. J.

...and ROSEMAN BOOSTERS say —

○ Fairways cut with ROSEMAN Roller Mowers receive the same kind of treatment your putting green mowers give your greens—they are always ready for play, early spring or late fall.

True operating economy is building toward a full membership ... and that comes only from a beautifully well-kept course.

Help your Board of Directors in their effort to get the finest turfed fairways by selecting a ROSEMAN.

You’ll find that it figures out just about a dollar a year per member.

Write for Complete Details, Today

ROSEMAN Tractor Mower Co.
800 DAVIS STREET, EVANSTON, ILL.

MOWER ROLLS AS IT MOWS •

Use GOLFDOM’S advertising pages as your safe buying guide
Memorial Drive Is Proposed to Help USGA Finance More Golf Turf Work
By T. H. RIGGS-MILLER

FEBRUARY 11, 1936 marked the tenth anniversary of the death of Dr. Charles Vancouver Piper, whose name has become synonymous with that richest of nature's garments—grass. Bent grass had been used in conjunction with other grasses for years, but it was Dr. Piper, who directed so definitely its use for the formation of fine putting green turf. He revived the century-old practice of vegetatively growing different species of this grass. It was through him and the USGA Green Section Bulletin that bent grass has become established as the standard putting green turf in the four corners of the earth.

Everyone who lived through growing pains of the Green Section, is enriched with experiences and memories of days past, but not forgotten. But sad to say, many of those, who did so much to establish the Green Section, have passed on to the green pastures of another world.

John Monteith, Jr., present head of the Green Section, was but a fledgling back in 1926 when the mantle of Dr. Piper fell upon him. But he has proved his mettle in assuming the great responsibilities and worry thrust on his shoulders by the death of his idol. This fact has given Monteith an austerity far beyond his age.

I said the mantle of Piper descended to Monteith. Although this is not true in the literal sense, it is absolutely true in practice. Prof. Carrier had left the department and that lovable character, Dr. Russell Oakley, collaborator and intimate of Dr. Piper for a lifetime, was beginning to feel the symptoms of the sickness that would soon carry him away. So, Monteith was made the standard bearer without the help of Piper's dynamic organizing or Oakley's investigatory spirit. How young John Monteith faced and overcame all these obstacles, no one outside himself will ever know.

Dr. Piper was perhaps better known in the forage grass field, than in golf. It was he who caused the investigation and discovery of a grass growing in the vicinity of Khartoum, 2,000 miles up the Nile. This Sudan grass has added millions of dollars to southern agricultural wealth.

This last year Dr. Monteith has been studying air currents for the control of brown-patch, together with chemical weed destroyers and other subjects. With a skeleton staff, how many important investigations have been sidetracked?

Unknown Costs Retard Turf Research

How much does it cost clubs not to know some little thing? What will golf courses do if some entirely new malady attacks their turf? How much would a club save if, like disease-resisting sugar cane, a new variety of disease-resisting grass could be found? The greenkeeper cannot be expected to know these things, no more than the family doctor would know a new infirmity without the assistance of the richly endowed laboratories, medical, and disease investigators.

Every person who plays golf is directly interested in the pleasure he derives from the type of putting greens and fairways that cover his course. It ought to be worth 25 cents a year to him to know that the man in charge of his course is in touch with up-to-date investigations on the best methods to provide and maintain carpet-like greens and velvet fairways.

The mechanics for collecting these quarters, if taken up energetically ought to produce results comparatively easy. By enlisting 1,500 clubs as USGA members, which clubs could be induced to assess their members 25 cents per year for five years, an average of 200 members would give $75,000 per year or $375,000 in five years.

Instead of casting a statue of bronze or carving Dr. Piper in stone, why not in this year of our Lord 1936 resolve to inaugurate the Piper & Oakley Foundation and dedicate it to their memory from the grateful golfers of the country.

Such financing of USGA Green Section work in turf would enable the Section to do the thorough scientific job envisioned by its founder.

The 15 years of the Green Section have seen substantial achievement, and, of course, the mistakes inevitable in human endeavor. But that period has sharply defined the province of the Green Section as that of scientific research, that of coordination of golf turf work of various able and independent sectional agencies, and that of field work. Such departures from a strictly scientific function as the ill-starred experiments of local buying bureaus, took up their doomed days; but this served only to more clearly mark the true function and future of a national Green Section service.

The tenth year after the death of the
To a Committee
ABOUT TO BUY HOSE

Many a committee has cost its club good dollars by saving a few pennies on bargain hose that went to pieces in a season or two.

Goodyear Emerald Cord Hose costs a trifle more, but many clubs report getting from 5 to 6 years' service. The saving in replacement cost makes it the lowest cost hose you can buy!

It wears longer because its tough cover is specially compounded to resist the oxidizing action of sunlight and heat that causes ordinary rubber to check and crack — because its double carcass of heavy double-braided cord* armors the rubber against dragging and yanking strains.

Rich green in color, Goodyear Emerald Cord is the finest hose built. If your dealer doesn't handle, write Goodyear, Akron, Ohio, or Los Angeles, California.

*LOOK FOR THIS SEAL —the guarantee of finest construction, longest life
MADE BY THE MAKERS OF GOODYEAR TIRES

THE GREATEST NAME IN RUBBER
GOOD YEAR
EMERALD CORD HOSE

Thank you for buying from GOLFDOM advertisers; they are O K
At CORNELL U

—The New York State College of Agriculture experiment station turf experts testify about

ROYER COMPOST MIXERS

"The Royer . . is continually grinding up the material into a very fine condition. This is really a forceful screening process and it is done so efficiently that very little coarse material collects around the machine. What does can be shoveled through a second time and if it does not go through then, it is pretty hard, worthless stuff.

"Moreover the Royer has an adjustment called the deflector which can be raised so that the stream of fine compost material can be loaded directly into the truck.

"We are very favorably impressed with the work of the Royer."

Practical greenkeeping authorities who maintain notable golf courses on wise budgets will tell you that ROYER compost mixing is the way to cut composting costs and produce uniform, properly screened material.

The ROYER handles lumps or sod—wet or dry—mixes and loads—and saves you from 70% to 90% under manual compost mixing costs. It pays for itself quickly.

For complete details, write

ROYER
FOUNDRY & MACHINE CO.
158 PRINGLE ST. KINGSTON, PA.

Green Section’s prime mover presents Dr. Piper’s idea on the threshold of its period of greatest development and service. And this can be accomplished if there are golf club officials who can compare the turf technical situation of 15 years ago with that of today and prevail upon their clubs to act in accepting their pro-rata financing of a service that has demonstrated its value to every golfer.

Massachusetts Golf Assn. Issues Helpful Greens Booklet

ANNUAL diary of the Massachusetts Golf Assn., of which Edward J. Poor is chairman and Frank Wilson, James McCormack, John Counsell and Harry P. Hood constitute the sub-committee on course maintenance, again presents a helpful notebook to the state’s greenkeepers.

The book contains articles on Fairway Watering by Harold Pierce; Liming Grassed Areas by H. B. Sprague; Lead Arsenate to Control Turf Insects by W. D. Whitcomb; Soil Acidity and Turf by H. F. A. North; Essentials of A Fairway Fertilizer Program by O. J. Noer; Common Turf Diseases; Caddie Tips; and miscellaneous data, together with the daily diary and memo space.

MY MAINTENANCE METHODS

(Continued from page 18)
ing practices have become so standardized that there is little I can say regarding the methods on one particular course that are different from those on a thousand or more other courses.

Wide Variation
In Watering Methods

By comparison, our watering practices show great diversity, due not only to differences in greenkeeping practice but to variations in soil type, character of turf, exposure, climatic influence and a number of other factors that make very small piece of grass an individual greenkeeping problem. These variations are so manifold that it would be impossible to lay down any one set of rules by which a novice could confidently expect to gain satisfactory results. Watering plants, whether they be flowers or grass, whether growing in a greenhouse or outside, require a technique that must be acquired by actual experience, to which must be added a certain intuition.

Greensmen learn with practice just about how much water it takes to satisfy
a green though they might be hard put to explain why some dry out quicker than others even though they might have helped to build them. Two courses lie across the road from each other both on the same type of soil, but each greenkeeper follows a system of watering different from the other and both are successful. I follow my way and get along but if I try your way which I now is successful with you, I will likely come to grief, so I prefer to avoid laying down any rules about it.

Prefers Early Morning Hand Watering

Speaking of greens, our practice is to water by hand in the early morning, using the full flow from the end of an inch hose and spreading the stream by holding the thumb over the opening. The average green which is from 5,500 to 6,500 square feet takes from 25 minutes to half an hour. The soil is a heavy clay. I have tried night watering with machines but could not do so well though there are courses all around that sprinkle that way all the season and keep their greens in splendid shape. It is the human element cropping out. The tees and all other turf we do with sprinklers. Hand watering is done daily, in the daytime so that the man can see what he is doing. It also places the responsibility with the man who has charge of the green. By watering daily the soil is kept at approximately the same moisture content and we do not lose contact with the subsoil moisture. As I mentioned before, the soil is a tight clay and is hard to wet down once it has dried out. Our evaporation losses are light due to the compact mat of metropolitan bent, transpiration is not rapid; the morning wash seems to replenish well enough. I might add that this operation replaces the whipping that is practiced quite generally to disperse the dew.

The increase in the practice of fairway watering and development of newer and more efficient types of pumps and sprinklers is sufficient to make this a subject of discussion in itself. Each year brings in a large crop of new systems, incorporating new ideas and improving the method of water application.

Each year as more clubs make installations we are adding to the sum of knowledge concerning this phase of irrigation. The recommendations of today are not the same as those five or more years ago. In this respect I am referring to the eastern
half of this continent, particularly the north central states.

Introduction of these systems has so improved playing conditions that we find many clubs are practically forced to make the investment in order to hold the membership and I rather doubt if any other expense has been more gratifying to the members.

Hopes for Soil Improvement From This Winter's Conditions

As in green watering, we find many factors influencing the effect of water applied to fairways. There is a world of difference in the water requirements of a sandy soil and a heavy clay soil. There is a different response from varying species of herbage; some types of grass love the dryer soils, others are more tolerant of damper ground. It is only logical that unwise use of water might easily change the character of the turf. Everyone has noticed how clover will run riot in many places under the influence of heavy rains and heavy sprinkling. From my observation, I am inclined to think that there is a tendency to over-water, that is, where the supply is ample. The clover experience taught us to use caution but now it seems that after many seasons of watering, our heavy clay soils are beginning to show effects not altogether satisfactory, a sort of puddling as it were.

This winter, which is a severe one, may be beneficial since the frost will help considerably to break up the colloidal nature of this soil. Prior to this winter it has been many years since we had the right sort of freezing and thawing and to aggravate the situation we have had three seasons of drought through which we have watered heavily.

If we could cultivate our soil after the manner of the farmer or orchardist we could overcome some of this condition but we have to keep in mind that the soil cannot be disturbed. Consequently I am of the opinion that on the heavier soils anyway, we must study to make the least amount of water do the most work and that any over the required minimum is an unwarranted expense and a hazard to the soil.

Of the three recognized fairway system layouts, the long hose, the short hose and the hoseless, I think we as greenkeepers would be unanimous in choosing the latter if we had the money. The simplicity attached to the operation—one man starting out with no more equipment than he can carry on his back! What a comparison with the long hose course where a couple of men are busy two or three hours a day picking up and depositing a good sized truck load of hose and sprinklers. We might condemn the hoseless installation for the extra cost in pipe and fittings and the higher working cost due to higher pressures carried but on the other hand the replacement on hose is quite a big thing on the older type systems.

I see nothing to favor the old style where the pipes are run along the rough, requiring from 100 to 200 feet of hose to reach the farthest point of sprinkling, but there are many who hold to the short hose with the pipes located in the middle of the fairway where 25 to 50 feet is sufficient to supply the movable sprinklers and I would make a guess that systems of this sort will long be popular.

For the convenience of golfers night watering is most satisfactory and I follow that practice during the dry weather. At other times I water or set out the sprinklers for a while on days of quiet play.

Readiness for Disease and Insect Control Is Important

Of next importance I place disease and insect control though some here might figure that fertilizing should be given priority. And they may be right for fertilizing wisely should build up disease resistance. However I place it here rather to stress the necessity of being prepared against sudden attack and also to hint gently that unduly heavy fertilizing has been as much responsible for green trouble as neglect of feeding.

The practice in applying fungicides is divided into two schools; those who put it on wet through sprayer or barrel cart and those who prefer to mix it dry with sand or soil and apply it broadcast or with a topdresser. I think those who prefer to spray or sprinkle are largely users of organic mercury compounds and those who apply dry chemical lean towards the inorganic forms. Referring to our own practice, we broadcast all our chemicals dry and follow up with a light sprinkling when we want it washed off the leaves. We have three or four men who are skillful broadcasters and I seldom notice any injury from too great concentration or from uneven distribution. By using the dry method we have a means of quickly attacking any outbreak of disease. We always have a supply of material (bulked with sand) on hand and a list hanging in
KINGSTON
A. N. PECKHAM
RHODE ISLAND
for 16 years
has produced and furnished direct to golf clubs, parks, etc., different varieties of
Bent Grass Seed
This seed grown under the rigid climatic conditions of New England produces grass that
has built up RESISTANCE to the various fungus diseases prevailing in our northern
States.
It is, of necessity, WINTER HARDY and makes a fine bladed, permanent, desirable
turf for your greens, lawns, etc.
We also furnish a FAIRWAY MIXTURE composed of 5 different varieties of fine turf
grass seed which produces a BALANCED closely woven turf on lawns, tees, tennis courts,
fairways, etc.
PURCHASE YOUR SEED DIRECT FROM THE FARMS WHERE IT IS
GROWN AND THUS SAVE FOR YOUR CLUB ALL MIDDLE-MEN'S PROFIT.
the shed shows how many pails of this mixture are required for a full dose for
each green. Half or quarter of the fungicide is followed immediately by light
washing with water. Forty-eight hours later we broadcast a light dose of sulphate
of ammonia. We have found that this program works in very smoothly with our
labor routine. These applications are made in the evening, the men coming back
after their supper. Four men usually are sufficient and they work for two or three
hours.
Arsenate of lead is spread the same way for cutworm control and a few years ago
when sod webworms were a menace we found it sufficient to hold the injury in
reasonable check. With us, cutworms have been so persistent we have not had to add
arsenate of lead to the greens to keep earthworms away.
Mention of earthworms brings up the observation that through the Middle West,
the custom is growing of treating the fairways with arsenate of lead. This is an
old story to those in the Japanese beetle area but until recently very few courses
in the Chicago district went after the earthworms on such large scale.
Fertilizing and topdressing are major operations and demand an important place
in the yearly schedule, as we all know very well. One of the most noticeable phases
in connection with topdressing is the diminished importance of manure. Not so
many years ago the compost pile, of which at least a third or more was good manure,
was considered the hallmark of good greenkeeping, but with the increasing dif-
ficulty of getting adequate supplies of good quality, we have dropped it from the pur-
chase list and are using instead peaty humus or enriched topsoil fortified with
commercial manures and fertilizers.
We have not used any composted manure
on our greens in the last eight years. Our
topdressing material is made of approxi-
mately equal parts of top soil, muck soil
and sand. For the first dressing in the
spring we add one bag of Milorganite for
each green. We topdress lightly, 3 times a
season, ½ yds. or less per green. Material
is applied with a topdresser, dragged or
raked and mown if the surface looks
ragged. Inequalities in the surface as a

HYDROLIZE
for
PERFECT GREENS

AND CUT MAINTENANCE COSTS!

The Hydrolizer System provides a new precision service for brown patching, fertilizing, worming, insecticiding, and limeing—with new
savings in costs—a new safe method that requires no preliminary mixing or pumping, and guards against the misuse of chemical values.
You set a simple control for the mildness or richness desired and the
Hydrolizer does the rest, automatically. The Hydrolizer System is
highly recommended by greenkeepers and horticulturists throughout
the country. Write for complete information telling of the many ad-

WRITE TODAY! AMERICAN HYDROLIZER CO.,
ELMHURST, ILLINOIS
THOMPSON & JONES

THE DEPRESSION DIDN'T STOP US . . . our reputation for designing distinctive courses has enabled us to add eleven new ones during the past three years to one hundred others now being enjoyed by golfers everywhere. Our courses cover the Western Hemisphere from Rio de Janeiro to Vancouver . . . outstanding courses, all of them.

If you want a distinctive and pleasurable golf course, economically constructed . . . we can create it for you.

45 West 45th Street, New York

IT'S ALMOST HUMAN CARPENTER mower sharpening SYSTEM

- Sharpens both hand and power mowers. Does the job almost automatically. Easy to operate—simple to adjust—no experience required. Keeps mowers always efficient at low rate of cost.

WRITE FOR ILLUSTRATED FOLDER
Golf Supply Houses, etc., are invited to write for dealer proposition.

STONEACRES
Distributors PRINCETON, N. J.

ALL - PURPOSE POWER MOWER CUTS ANY HEIGHT—SAVES 50% OF YOUR COST

Horizontal rotary scythe action eliminates all supplementary cutting and trimming equipment.

LOOK AT THESE ADVANTAGES:
- LOW COST of maintenance, due to few working parts, simplicity of design and high quality of materials used.
- EASILY ADJUSTED—range of cut from roots to three (3) inches by 1/4-inch adjustments.
- SCYTHE ACTION CUTTER—no reel, bottom blade, clutches, gears, or chains to come out of adjustment.
- SAVES LABOR—Cuts either forward or backward with no lost motion.
- TRIMMING—Cuts under and around shrubbery . . . within one-half inch of fences, monuments, etc.
- CUTS ANY HEIGHT of grass and weeds—makes a lawn in one operation.
- FERTILIZING VALUE—Cuts grass into short lengths that sink into the roots where they produce fertilizer of high value.
- WRITE FOR FREE BULLETIN NO. 10.

GOLF'S MARKET PLACE

The 1936 carton and box for Tommy Armour golf balls will make a colorful display in pro-shop display cases. Worthington Ball Company, Elyria, Ohio, report heavy advance orders indicate a great year for this ball.

Carpenter Lawn Mower Sharpener, distributed by Stoneacres, Princeton, N. J., is meeting with fine reception by greenkeepers. All types of mowers, hand or power-operated up to 36-inch blades, can be handled on the machine, and blades are result of settling are filled by hand and worked well down through the mat.

Fairway fertilization must be given serious attention nowadays. I mention this because it seems to be commonly supposed among golfers that irrigation will take the place of fertilization. This is decidedly not so. Watering will supplement the use of fertilizers but will not replace them. To make the point stronger I will state it this way: that with the particular soil with which I am familiar, I could promise after several seasons to have a much better turf at less cost, by fertilizing without water than by watering without fertilizers.

While many have the habit of applying fertilizers in the spring when making one annual dressing, the practice is changing to early fall. Observers point to the latter as being more satisfactory where crabgrass is a menace. It is also probable that this custom might help in clover management by encouraging a strong growth of grass in the cool season and at the same time bring about a softer condition in the clover plants to make them susceptible to winter-kill. Our general practice in the past has been to put on the fertilizer early in the spring; it got the job out of the way and it gave the grass the full advantage of the spring growth.

WHAT'S IN YOUR SOIL?

"A complete inexpensive qualitative chemical and bacteria soil analysis service."

ELMHURST LABORATORIES
Horticultural Chemists—Biologists
ELMHURST, ILLINOIS