

WOMEN'S CLUBS

We have built them in four different weights and iron clubs for women are made in three weights. The pages—the advantages this larger range of selection. First of all we carefully constructed and iron club went those requisites of a good club were carefully designed with features to the feminine eye. But more important the steel shafts used in Hagen women's clubs are necessary suppleness so essential. The woman's game. It is not right when men can use clubs of like specification throughout the range. Here is a variety of wood clubs and three in an opportunity now to inquiring after that women's way. With this Hagen clubs you are in a position to solve their problems—to get them individually. Get your share of the increasing business of them.

3

WEIGHTS
and LENGTHS
IN WOMEN'S
IRON CLUBS

INTERNATIONAL



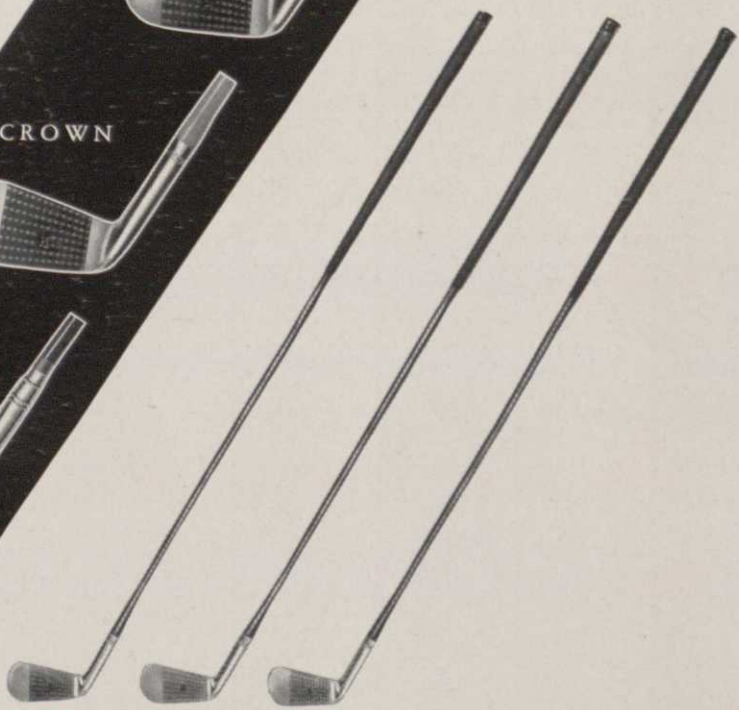
CROWN



DE LUXE



GRADUATED



Medium Heavy Medium Medium Light

WOMEN'S MATCHED IRONS

| | Medium Light | Medium | Medium Heavy |
|---------------|--|--|--|
| | Weights graduate from 13 1/4 oz. driving iron to 14 3/4 oz. niblick. Lengths from 36 1/2" to 34" | Weights graduate from 13 1/2 oz. driving iron to 14 1/2 oz. niblick. Lengths from 37" to 34 1/2" | Weights graduate from 13 3/4 oz. driving iron to 14 3/4 oz. niblick. Lengths from 37 3/4" to 35 1/4" |
| International | 503-A | 503 | 503-B |
| Crown | 403-A | 403 | 403-B |
| De Luxe | 103-A | 103 | 103-B |
| Graduated | 203-A | 203 | 203-B |

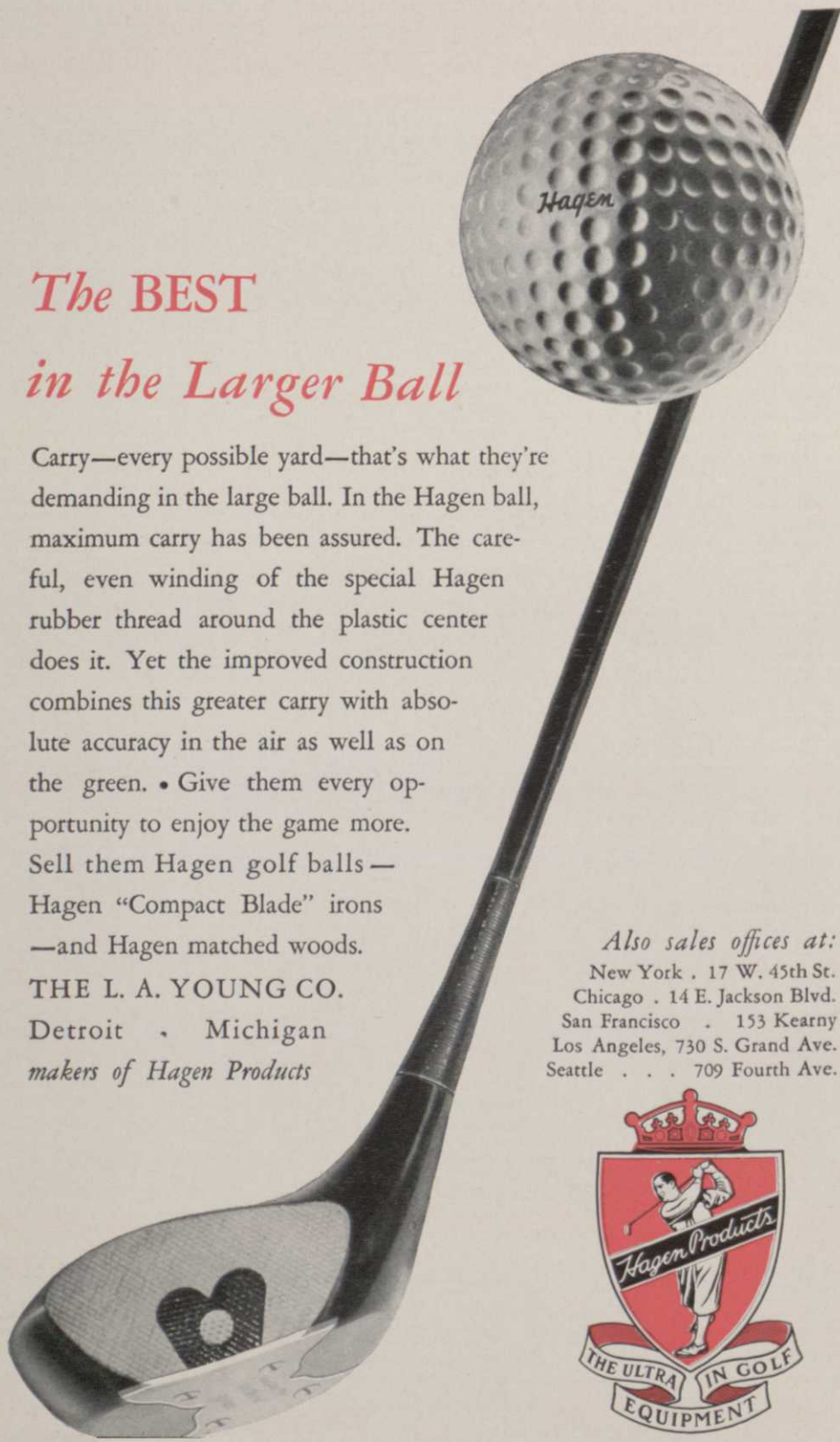
Products

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unless the architect's office has such a man in his organization such services should be otherwise arranged for.

Character of Liquid Wastes

In general, the liquid wastes from a clubhouse consist of sewage from toilets, waste water from lavatories, bath tubs, kitchen sinks, shower baths, laundry machinery and tubs, and floor drains, and cooling water from refrigeration and other machinery. Although less than one per cent of sewage is putrescible organic matter, it is this small amount which creates the entire sewage disposal problem and calls for careful consideration from a sewage treatment standpoint. All water from roof and foundation drains, and all boiler drainage, should be discharged into a storm sewer which should be a pipe line separate from the sanitary sewer if the sanitary waste is to be treated before final disposal. Also, water used for cooling of refrigerators and other machinery should be kept out of the sanitary sewer. It is often worth while, in the interest of economy, to pump this water into the hot water plumbing system as its temperature is considerably raised by the cooling operation, thus effecting a saving in fuel and reducing the quantity of water consumed by the club as well as the quantity of sewage to be treated.

The character of the sewage from a clubhouse, though varying considerably at different times of the day and week, is in general not dissimilar from municipal sewage. It usually contains, however, an excessive amount of soap from the shower baths, which complicates the problem of treatment. Shower bath water should always discharge into the sanitary sewer, for soapy water will cause a nuisance as quickly as toilet water if discharged in the open without treatment.

Even more important is the greasy waste from the kitchen sinks. If allowed to flow through the plumbing pipes to the sewer without first intercepting the grease, these pipes will soon fill with grease and become clogged. A grease trap, of adequate size and water cooled, should be placed on each kitchen sink drain, and located as near as possible to the sink. This trap should be easily accessible and the grease should be removed at least twice each week. Usually the grease trap can be placed in the basement immediately under the kitchen sink which is on the floor above.

The quantity of liquid wastes to be handled must be known before the sewage treatment plant can be designed. This quantity will vary considerably, depending upon several factors. The membership of the club, partial indication of the probable flow, must be considered along with the character of the club, completeness of clubhouse facilities (including number of plumbing fixtures) kitchen and dining-room capacity, and use made of the clubhouse. Also, sewage flow will fluctuate widely for different days of the week and different hours of the day, depending upon the number of golf players and the resulting use of shower baths and other facilities. Heaviest flow will, of course, be on Saturdays, Sundays and holidays. This fluctuation of flow also somewhat complicates the problem of sewage treatment.

Quantity of Wastes

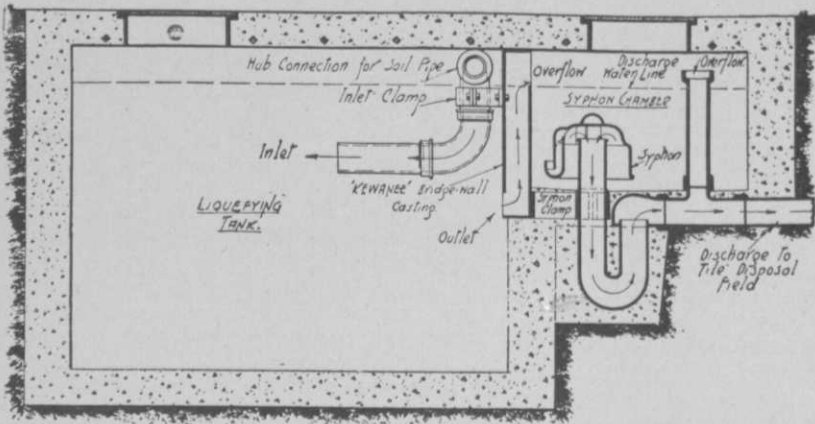
To illustrate the wide variation in the quantity of flow, the following figures are given, showing the week-day sewage flow measurements from three representative golf clubhouses in the Cleveland district.

| | Mana- kiki. | Pepper Pike. | The Coun- try Club. |
|--|----------------|-----------------|---------------------------|
| Number of members— | | | |
| Total | 325 | 125 | 450 |
| Normal weekday attendance | 125 | 50 | 150 |
| Number of employees | 35 | 10 | 90 |
| Sewage flow—Normal weekday— | | | |
| Gallons daily..... | 10,000 | 5,700 | 30,000 |
| Peak hourly..... | 1,040 | 940 | ... |
| Per member..... | 31 | 46 | 67 |
| Per member attending club normal week- day | 44 | 114 | 200 |

This table shows very clearly that it is not safe to assume a per capita daily sewage flow without careful consideration of the factors affecting such flow.

Disposal of Sewage

Having determined the character and quantity of sewage, we are ready to consider the best method of disposal. Assuming that a city sewer is not available, the clubhouse sewage must be discharged into a water-course, after sufficient and proper treatment to insure freedom from nuisance below the sewer outlet. If a large stream is available it is sometimes possible to discharge the sewage without treatment, but such a condition rarely exists. If the stream is of fair size, so as to effect reasonable dilution of the sewage, the treatment plant may consist of a septic or settling tank alone, in order to reduce the heavy suspended matter and thus prevent a sight and odor nuisance along the stream banks below the outlet.



Only a manhole cover shows on the surface of the ground in this installation. Odorless enough to be located in a clubhouse front lawn if necessary.

(Courtesy: Kewanee P. U. Co.)

In most cases, however, only a small water-course or a ditch is available and this is almost if not entirely dry during periods of hot dry weather, just when the greatest use is being made of the club and the sewage flow is hence heaviest. Under these conditions sewage from the clubhouse must be completely oxidized and stabilized before final discharge in order that it will not contaminate the stream and cause conditions detrimental to health and comfort. This is accomplished by a settling process in a septic or settling tank, followed by some form of filter to remove the organic matter, the type depending on the location of the plant, the topography, the soil, and other conditions.

Selecting a Plant Site

The selection of the site involves several considerations. Although the plant can be built entirely underground it must be accessible by means of manholes and there is thus some danger of nuisance from odors. The site should accordingly be well removed (at least 500 feet) from the clubhouse or any of the greens or tees. The elevation of the ground should be such as to permit gravity flow to the plant in the sewer from the building and must slope sufficiently to permit the necessary head, or fall, through the plant. If sufficient head, or fall, is not available the sewage must be pumped at the most convenient and economical location. This pumping can be made automatic. A site along the nearest water-course or ditch is usually best. After construction the plant should be screened with shrubbery especially if

any part of it is exposed at the surface of the ground.

Septic Tank

The septic or settling tank is usually a covered concrete tank, of either a single or a two-story (Imhoff) design. In the latter type the upper story is a trough through which the sewage flows under which is the "sludge" compartment where the bacterial or septic action takes place. No chemicals are required for any type of settling tank. The total capacity of the tank should be approximately equivalent to the average flow for one day. The usual commercial type septic tank is inadequate in capacity and costs more than a tank built in place. The function of the septic tank is to break up and remove by settlement all settleable solid matter in the raw sewage. This constitutes roughly about half of the organic matter, the remainder being suspended matter which must be removed by the secondary or filtration process.

Sometimes a coarse iron bar screen is placed in a small chamber in the sanitary sewer just ahead of the septic tank, for the purpose of catching rags and other waste which would be harmful to sewage treatment. But experience has shown that this screen is liable to cause more trouble than good and it may be safely omitted.

Secondary Treatment

The type of secondary, or oxidizing treatment to be used will depend on the size of stream receiving the plant effluent, the quantity of sewage flow, topography of

site, and character of soil. With all types the purpose is to aerate and oxidize the tank effluent by providing conditions suitable for the growth of the proper kinds of bacteria. By this means practically all of the putrescible organic matter in the sewage is finally removed.

Sand Filters

Sand filters, if properly designed and constructed, will give the most complete purification. These may be built either at the surface or buried beneath a layer of topsoil, and should consist of two units so that either unit may be temporarily cut out of service for repairs. If the subsurface filters are used their area should be about twice as large as with the surface units, on account of the reduced aeration effect underground. In either case the filters should be comprised of underdrains laid in gravel or crushed stone, over which is placed about 24 inches of a clean, graded, coarse sand with sufficient distribution piping over the surface to carry the sewage uniformly to all parts of the filter. With the subsurface filters the distribution piping should be laid in gravel or crushed stone. Over the entire surface should then be placed a four-inch layer of straw to separate the filters from the topsoil. A 12 to 18-inch layer of soil may be placed at the surface. The distribution piping should be well ventilated by means of four-inch riser piping leading to the surface, the tops of which are protected with hoods or screens.

Between the tanks and filters there should be built a "dosing" tank, of covered concrete construction, containing siphons, the function of which is to hold back the tank effluent until a sufficient volume of sewage has accumulated in the dosing tank to fill the distribution piping and thus insure uniform filtering action by all parts of the filter. Also, between doses, the filters will have an opportunity to become aerated, which is most important for the purification process.

Lath Filters

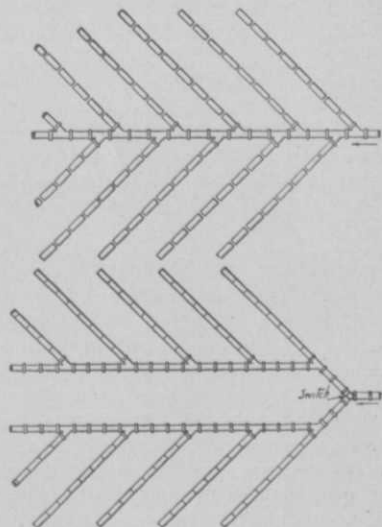
Another type of filter which has recently come into the field makes use of common building lath for filtering purposes. It has the advantage of being low in cost and accessible for close control of the treatment process. With this type a covered concrete chamber is provided within which is constructed one or more columns of lath four to six feet high and of predetermined area, to serve as the filter-

ing medium. The lath in each layer are placed in parallel rows, spaced two lath-widths apart, with adjacent layers laid at right angles to each other. The effluent from the settling tank is discharged over the top surface of the lath columns by means of a "tipping trough" so designed that it will automatically tip and spill its contents over the surface when full. The sewage then percolates down through the lath column being aerated and also purified by bacterial action on the way. The effluent is conducted to a secondary tank where it gets final settling before discharge into the stream.

The settleable matter, called "sludge," must be removed from the bottoms of the settling tanks, either by discharge (1) directly into the outfall sewer below the plant during periods of freshet flow in the stream, (2) into tank wagons whence it is hauled away, or onto small surface sand filters. The latter method, though effective, is not desirable as it is unsightly.

Percolating Filters.

Crushed stone or slag is sometimes used for the filtering process, the tank effluent being sprayed over the surface of the stone by means of fixed nozzles. Although this method is effective, it requires con-



Two ways to lay tile lines for soil absorption. The lower system is better on heavy soils.

siderable attention in order to keep the nozzles from becoming clogged. Odors are sometimes noticeable some distance from the plant when atmospheric conditions are right for it.

Subsoil Absorption.

In place of any other type of oxidizing process the tank effluent is sometimes discharged into filter trenches forming a subsoil absorption system. If the soil is unusually porous the sewage is discharged into it by means of small tile or sewer pipe lines, with open joints, laid in trenches over a considerable area, thus allowing the flow to be absorbed by or filtered into the ground. Such area should be properly drained. If the soil is heavy clay, or even partially pervious, this system is not practical, while under the most favorable conditions it is expensive since a large footage of trenches and tile are required in order to prevent clogging.

Chlorination.

The use of chlorine gas as a disinfectant is coming into frequent use in connection with sewage treatment processes. Its purpose is to prevent an odor nuisance both from the plant and the stream below the outlet. Although its application is not always necessary or advisable it is, under certain conditions, very much worth while. The chlorine is applied either to the raw sewage, to the tank effluent or below the plant.

Costs.

From the above discussion it is apparent that the cost of the sewage treatment plant for a country club will vary greatly, and will depend upon the quantity of sewage flow and the type of plant constructed. The cost will range from as low as \$1,000 to as high as \$16,000, but will usually fall between \$3,000 and \$8,000 exclusive of sewers or pumping equipment.

Maintenance and Operation.

No matter how simple the sewage plant, it must not be forgotten or its operation neglected after it is placed in use. This is most important if satisfactory results are to be expected. Too often the plant is considered as just another plumbing fixture, to be buried and left to run itself. This is just as sensible as to neglect a piece of machinery and will result in trouble, cost and nuisance. If the investment in the plant is to be properly capitalized someone must be made responsible for its operation. The tanks should be cleaned out periodically and the filters kept in proper operating condition, including siphons, tipping troughs, and other accessories. Usually not much actual work is required but daily inspection should be made to see that all parts are function-

ing smoothly. Also where possible the daily sewage flow to the plant should be measured, by means of wires or other devices, in order to see that the capacity of the plant is not being overtaxed.

At some clubs, where the plant effluent must be at all times free from organic matter, technical control of the plant is maintained. By this is meant that the designing engineer or a sanitary chemist is retained, at a nominal monthly fee, to make frequent inspections of the plant and take samples of the effluent for chemical analyses.

In most states the engineering bureau of the state department of health not only approves the detail construction plans for sewage treatment plants but makes frequent inspection of their operation. Such service is worth while and is a protection to the club against faulty design or careless operation.

Conclusions.

In conclusion, and at the risk of repetition, it should be pointed out that clubhouse sewage disposal must not be taken too lightly. Many factors, most of which have been mentioned above, must be taken into consideration if unpleasant sight and odor nuisances are to be avoided and a final effluent obtained which is not detrimental to health and comfort.

"Another Tank Would Have Done the Job"

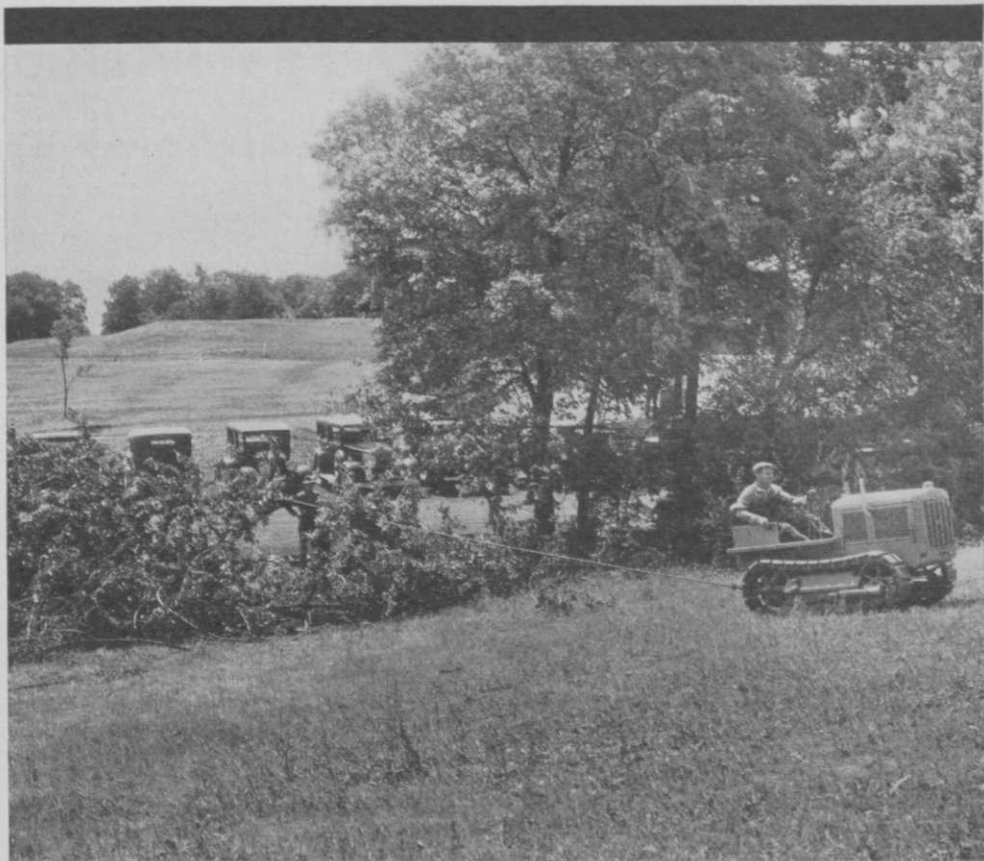
NEWS items sometimes point a moral. Here is a good example:

Columbus, Ohio.—Three tall, fire-scarred chimneys and a smouldering pile of ashes were all that remained Monday of the fashionable Elks Country Club, located north of the city, which burned Sunday night, with loss estimated at \$125,000.

Lawrence Huber, greenkeeper, who lives nearby, called firemen and then, with the aid of Ernest T. Timberlake, house manager, emptied a 30-gallon fire extinguisher on the blaze.

"We almost had it out, and another tank would have done the job," Huber said.

The italics are ours. Make sure you have plenty of fire-fighting apparatus readily available around your clubhouse. Drill your employes in fire-fighting technique. Install a warning siren with a code of easily learned signals to tell the employes the location of the blaze.



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TRACTOR

Careful Coffee and Tea Making Always Demanded by Members

By R. E. LOVE

IN the preparation of coffee in the club kitchen, first select the finest quality possible which appeals to your clientele, purchase it in small amounts, and keep it in airtight containers. Whenever possible, use one pound of coffee at a time. Probably one of the most important precautions is that the water must be boiling before pouring into the urn. Use two gallons of boiling water to each pound of coffee. The mesh of the coffee bag must be finer than the coffee, and unbleached muslin, first soaked in cold water, will suffice. Pour the boiling water over the coffee in the bag, be sure the water is fresh and clean. Then as the water seeps through draw off just as much water as you put in and pour this back over the grounds again. Then allow it to brew for about fifteen minutes, then remove the bag, draw off a gallon of coffee and pour back into the urn, thus insuring even strength.

Be sure and keep the water jacket in the urn three-quarters full of boiling water. When through serving coffee after each meal, draw off all coffee remaining. Then thoroughly scrub urn and faucet with hot water, and then fill with hot water, and allow it to stand for a few minutes. Then draw off this water, and fill urn about half full with cold water and leave until time for next brew when this water is drawn off and the urn rinsed in hot water and the brewing repeated. It is well to keep all tubes, gauges, and faucets absolutely clean with a special brush for that purpose, and also every few days wash the urn with a little sal soda and boiling water, letting this stand for several hours, then thoroughly rinse with scalding water. This process dissolves any remaining coffee oils and aids in sweetening the urn. After the coffee is brewed remove the bag at once and wash out all grounds with cold water, and keep it submerged in cold water when not in use. Never mix old and new coffee, or allow a brew to last more than two hours. It is good policy to make small batches of coffee at frequent intervals, remember-

ing that fresh and well flavored coffee is a decided asset.

Coffee should be bought in small quantities as needed, freshly roasted and ground. Coffee quickly deteriorates after being ground unless kept in airtight containers. Also very hard alkaline waters have a deteriorating effect on the taste of coffee. We might note here that the stimulating property of coffee is due to the alkaloid *caffeine*, together with an essential oil. Like tea, it contains an astringent.

Telling Good from Poor Coffee

It is not an easy task to determine the difference between a good coffee and a poor coffee by simply looking at the bean. Specialists can discern a lot just from its appearance, but not even the expert buys his coffee from the appearance only. He also carefully tests the aroma, flavor, and cup quality of the coffee after it has been brewed. This is especially true since some coffees make an excellent appearance in the bean, and a very poor cup of coffee, while vice versa, some coffees that make a very poor appearance in the bean, as Mocha, result in an excellent cup of coffee.

The so-called "instant" or soluble coffees on the market are manufactured from a concentrated liquid coffee from which the water has been evaporated. This evaporating process results in small minute brown crystals, resembling in appearance pulverized coffee, which are soluble in either hot or cold water. The flavor of these soluble coffees varies with the quality of coffee employed, and the methods used in its preparation.

For particular coffee drinkers, an extra fine cup may be made by placing the coffee in a strainer in a pot over the range and boiling water is gradually filtered over it. If it is desired stronger, it may be re-filtered. In making coffee for one allow about 2 tablespoonfuls to 1 cup of water. To make a small pot of coffee, mix 1 cup of ground coffee with one egg slightly

beaten, and crushed shell. To $\frac{1}{8}$ of this amount add $\frac{1}{8}$ cup of cold water. Turn into a scalded coffee-pot, add 1 pint of boiling water, and boil for 3 minutes. Let stand on back of range for 10 minutes, and then serve.

Something About Tea

It is now in order to say a few words concerning tea and its preparation. First quality tea is made from young whole leaves. From analysis it has been found that tea is rich in protein, but taken as an infusion acts as a stimulant rather than as a nutrient. The nutrient is gained from the sugar and cream served with it. The stimulating property is due to the alkaloid *theine*, together with an essential oil; and it also contains an astringent—tannin.

In purchasing tea, buy only in small amounts as needed, and purchase good standard grades. Keep in a cool, dry place. In the making of tea, freshly boiled water should be used at all times because, if below the boiling point, the stimulating property, *theine*, will not be extracted. Long cooking renders a flat and insipid product on account of the escape of its atmosphere gases. Tea should be always infused, never boiled. Long steeping destroys the delicate flavor by developing a larger amount of tannic acid.

In the preparation of tea, first scald an earthen or china teapot. Put the tea in first, in the individual tea bag, and then pour on the boiling water. Let stand for about five minutes, remove the tea bag, and serve immediately with or without sugar and cream as desired. Or, as is the more common practice, it may be served as soon as the water is poured over the tea bag, leaving the removing of the bag to the discretion of the patron.

Big Profits in Iced Tea

A very profitable, popular, and attractive drink is iced tea. Large iced tea bags may now be purchased of excellent quality at the wholesale price of only 9c each. This 2 oz. bag is capable of making three gallons of fine iced tea. The final amount produced is even more than that when the ice used is figured in. Therefore, figuring 12 glasses to the gallon, a minimum number of 36 glasses is made from 9c worth of tea or four glasses for 1c! When the cost of the lemon, ice, sugar and mint leaves is added, and also the water, we can still produce a fine glass of iced tea at less than $\frac{1}{2}$ c a glass.

In making iced tea, first scald the container, then put in the iced tea bag, and pour freshly boiling water slowly over it, while turning the bag over several times to insure full and even strength. Allow to stand about ten minutes according to the strength desired, then remove the bag, and it is ready to pour into the glasses filled either with crushed or cubed ice. While cubed ice takes a little longer to cool the tea, it makes a more attractive drink than the quickly melting crushed ice. However, make sure that the cubed ice is clear, clean, and pure. Then add a quarter lemon, and a sprig of mint leaves for a unique flavor, and sugar as desired, and you have a most refreshing and attractive drink.

Cocoa is an invigorating and healthful drink, and is becoming a more popular beverage every day, especially in the colder climates. Many chefs prefer the paste method for making cocoa and hot chocolate, but the writer believes that the dry method results in a finer flavored and smoother drink than the former. For the finest cocoa, use only milk, no water. First thoroughly mix the dry cocoa, and sugar, one part to two, or more or less according to strength desired, then bring the milk nearly to the boiling point, stirring to prevent scorching. Then slowly add the dry mixed cocoa and sugar through a fine sieve, stirring constantly to make an even mixture. Next a little marshmallow paste may be added to improve the flavor, then let boil to top of pan just once. Remove from the fire and add a little vanilla extract flavoring. Pour into a pitcher or cup through a fine sieve, add a little stiffly whipped cream, or a marshmallow, and you will have the finest cup of cocoa you have ever tasted.

St. Patrick's Day Lunch

As an especial feature of the food section of GOLFDOM this month the writer has prepared a menu for St. Patrick's Day luncheon. With a little advance advertising listing a special tournament on that day as well as the following inexpensive but attractive set-up to be served in the club restaurant, much goodwill as well as increased patronage may be brought about.

ST. PATRICK'S DAY MENU

| | |
|---------------------------------|---------------------------|
| <i>Steamed Filet of Halibut</i> | |
| <i>New Potatoes</i> | <i>Parsley Sauce</i> |
| <i>Buttered Peas</i> | |
| <i>Shamrock Biscuit</i> | <i>Green Pepper Salad</i> |
| <i>Lemon Iceburg</i> | <i>Shamrock Cakes</i> |
| <i>Coffee</i> | |

As is to be expected, green is the predominating color scheme running throughout the menu. The fish may be put in a cheese cloth in a strainer and steamed for twenty minutes. One must observe extreme care in connection with the time and temperature of steaming fish, as a large protein content is lost if not careful. There is not so much connective tissue as in beef, so the fish cooks in less time. In mashing the potatoes, add the hot milk gradually while stirring constantly.

The peas, if not fresh, should be opened before preparing the luncheon, so as to aerate them so they may recover some of the lost oxygen. Heat slowly and then add hot soft butter. Shamrock biscuit are made with three little biscuits about an inch in diameter, placed together in the form of a shamrock. Make sure the lettuce and cucumbers are ice cold, crisp, and fresh before preparing. For the cake, use a standard medium cream pie recipe, which when spread with a pretty green icing, and a nifty design done with the white icing gun, will make a very attractive as well as a palatable dessert. Then with the addition of the ever delicious lemon iceburg, a most delightful St. Patrick's day menu is completed.

Ten Pointers for New Club Organizers

A. E. BUTLER, Board Member of Eagle Waters Golf Club, Eagle River, Wisconsin recently listed ten important things to be watched when organizing a new club. They are: (1) Secure a general golf architect. (2) Secure a real business man for manager and install modern accounting methods and labor-saving machinery. (3) Engage a competent greenkeeper. (4) Engage a golf teacher of ability and beware of bums who call themselves golf professionals and managers. (5) Make all mistakes on paper before building. (6) Sell 50 per cent more memberships than you ultimately expect to retail. (7) Build only what you can pay for; keep out of debt; establish a budget and keep within it. (8) Have a qualified public accountant familiar with golf club operations open the set of books and have periodic audits and reports in full detail. (9) Do not build for minimum requirements; anticipate. After installing a greens sprinkling system, for instance, be careful to install mains sufficient to sprinkle fairways as well at some future time. (10). Do not tolerate disturbers.

Managers, Pros, Greensmen in Harmony Plan

Pittsburgh, Pa., Feb. 23.—Officials of the Club Managers association, the Professional Golfers association and the National Association of Greenkeepers met at Long Vue C. C. today to establish definite policies of close co-operation between each organization and its members. Prospects indicate that representatives of each association will be appointed to executive boards of the other bodies, the idea being an interlocking effort for the extension of business operation at golf clubs, and recognition and advancement of the three department heads.

Observers of golf's business development see in this harmony move bright prospects of club operating methods and policies that will sharply reduce the expenses of lost motion and friction. Furthermore it is thought that the agreement of the department heads will hasten the day when the U. S. G. A. will accord recognition to the managers, greenkeepers and professionals in their executive councils.

Complex problems of country club operation have involved the department heads in a situation that is penalizing many of them and which was partially responsible for the conference. The department heads frequently work under conflicting instructions from officials who have unsound ideas of club operations. When the inevitable and unfortunate outcome is viewed the department head is held responsible, without having had the opportunity to exercise his offices in conducting or planning the work.

Interchange of employment data between the greenkeepers, managers and professionals also is expected to result from the plans made at this conference.

TWO YEAR GUARANTEE ON ROTO WASHER

Detroit, Mich.—Roto Golf Ball Washer improvements just announced by S. A. Cogsdill, president of the Cogsdill Manufacturing Co., include a larger tank for the solution, a sealed, fool-proof top and a ball ejector. The makers are guaranteeing both the washer and the brushes for two years.

IN LAYING out a golf course, do not forget that the heaviest play will be in the late afternoon when the sun is low in the west.