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The size of the particles has another important function in the soil. It determines the extent of the internal surface of the soil. The retentive power of soils for water is determined primarily by the extent of their internal surface. The plant food ingredients are absorbed by the surface of the particles or by forces governing surface reactions.

The soil particles, large or small—from gravel to clay—do not exist in the soil as independent units. The various particles are intermingled forming what we know as the type of soil. The individual particles within each type also coalesce, forming typical aggregates, and this property of the soil is known as structure. The form and shape of the structure of aggregates differ for various soils. There may be a crumbly structure, granular, nutty, prismatic, columnar, and the shape of this varies with the type of soil, condition of moisture and temperature. Soil structure is intimately related to soil texture. The texture in turn determines the weight of the soil.

The specific gravity of soils will differ according to the composition of the soil. As there are not many common minerals more than three times as heavy as water and not many lighter than 2.5 times as heavy, the specific gravity of soil grains will lie between these two figures. The presence of humus will decrease the specific gravity. The following gives the specific gravity of soil constituents: water, 1.0; humus, 1.2-1.5; clay, 2.5; quartz, 2.62; feldspar, 2.5-2.8; talc, 2.6-2.7; calcite, 2.75; dolomite, 2.8-3.0; mica, 2.8-3.2. In soils we do not determine the true specific gravity but the apparent specific gravity, taking the volume of the soil as it is with the pore space in it. The apparent specific gravity of an average soil is about 1.2 and a cubic foot of it will weigh about 75 pounds; a cubic foot of water weighs 62.32 pounds. A sandy soil consisting of a lot of quartz will weigh more than a clay soil which has in its makeup the substance with a lower specific gravity.

Another important physical aspect of soil properties is the moisture regime. Three forms of water may be considered: 1. hygroscopic, 2. molecular, 3. gravitational.

Capillary Movement

The porosity of the soil is responsible for much of the most important phenomena in the moisture of the soil, namely, the capillary movement.
moves faster in wet soils than in dry soils. Thus when a soil is dry at the surface, small rains induce more rapid moisture evaporation from the lower layers by establishing the capillary contacts. Mulching of soil after small rains serves the purpose of breaking up capillary rise. Superficial sprinkling of lawns or any grass sod will do the same thing as small rains do to soils, namely, exhaust the moisture from the lower layers.

The fate of the water coming in the form of rain is extremely interesting. Part of it is absorbed by the soil, part goes down to the ground waters and the rest is shed from the surface known as “surface run-off.” The soil type will determine the disposal of the rain in the relative proportion of the respective portions. A sandy soil will allow a larger percolation portion as compared with a clay soil; the surface run-off will be higher on a clay soil, etc.

The depth of the ground water, or as we know it, the water table, is an important consideration in the study of soil moisture. The level of the water table is not constant, especially in humid regions. Deep rooting plants will do well on a soil with a high water table. The grasses as a rule do well on such soil.

Another important physical property of the soil is its temperature. The temperature of the soil varies with the periodical fluctuation of the sun’s radiation, fluctuations of the air, temperature; it depends on the heat properties of the soil constituents, heat capacity of soil, color, structure, texture, exposure, etc.

An essential feature of any soil is the capacity to hold air and other gases, and permit their circulation.

The quality and quantity of soil air differ from that just above it. There is more carbon dioxide in the soil air, a little less oxygen. The composition of the soil and the process taking place in it will determine to a certain extent the quality and quantity of gases.

Among other physical properties of the soil mention should be made of its stickiness—forces with which the particles are held together, plasticity—the property to maintain a definite form. These are determined primarily by the relative proportion of the various soil fractions.

The physical properties of the soil may be summarized as those which control the moisture, air and temperature of the soil, or as we call it, the aero-hydro-thermal condition of the soil.
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Planning Menus That Make Club Famed for Food

By ROBERT E. LOVE

The planning of menus for golf club food service is one of the most important as well as one of the most difficult aspects of the club food department. Successful menu making is now a science as well as an art, especially so in the golf club restaurant. The club steward should study the psychology of human behavior, and learn to anticipate the desires and requisites of the people who might visit his dining room. He must always bear in mind the fastidious and high class patronage of the golf club restaurant, and should arrange his menu accordingly. Here again it may be emphasized, as in the previous articles of this series, that the best quality and only the best quality foods should be served at all times.

From the standpoint of the patron, the appearance of the menu, and its effect in bringing about a genuine desire for the dishes thereon described, is the important item for consideration. A neat, clean, and attractive menu is very essential for a successful restaurant business. There is nothing that can start a meal off in the wrong way any quicker than a soiled and worn-out menu. Fresh, immaculate, and artistic menus start the patron off in the right frame of mind. Next, the bill of fare must be cleverly but clearly arranged, so that the guest experiences no trouble in finding what he wants. Special items should be described with the proper size and type of printing. Soft color tones and combinations with the surroundings can be worked out to advantage. Depending on the type of club and service in vogue, the personal touch and appeal may be inculcated quite successfully in the menu.

15 Points of Menu-Making

From the standpoint of the club steward, he strives to draw up his menu in such a manner that it will result in the greatest satisfaction to the patrons, coupled with a reasonable profit according to the policies of the club. In the planning of menus there are fifteen important points for consideration as follows:

1. Type of clientele.
2. Style of service.
3. Raw food cost.
4. Simplification.
5. Attractiveness—appeal.
7. Proper use of left-overs.
9. Contrast between courses.
10. Temperature—hot and cold foods.
11. Texture—hard, soft, whole, or minced.
12. Flavor—bland or highly flavored.
13. Variety in preparation as to form, broiled, etc.
14. Pleasing color schemes.
15. Division of labor.

In consideration of the first point, "Type of Clientele," it will suffice to say that the patrons of the country club dining rooms are used to the best quality foods, delightfully prepared and served. Therefore the steward must ever strive to serve the best of quality foods, deliciously prepared.

The "Type of Service" in vogue at the club has much to do with the drawing up of the menu. If the service is a la carte, it calls for one type of menu, and if table d'hote, special luncheons or dinners are served, the menu will be arranged in a different manner. The "Raw Food Cost" is important, but as has been emphasized before, it is not the dominating factor in food selection. The all-important item in club food buying is intelligent and economical purchasing of quality foods. Never permit a few cents difference in price trip you into the disastrous practice of serving inferior quality foods. It is well to always bear in mind that QUALITY and SUCCESS are inseparable companions.

Simplify the Menu

Many of the larger dining rooms and restaurants throughout the country have a menu with plenty of variety due in part to the many different types of patrons which frequent these public eating places. How-
ever, since the clientele of the golf club restaurant is composed mainly of one class of people, variety in the menu is not so essential. In fact, simplification of the club menu according to the wants of that particular type of patronage will result in larger, easier profits and better satisfaction to all concerned. The "attractiveness of menus" was considered above, and too much stress cannot be put upon this important point. The menu should be so drawn up that it creates immediate attention and creates a genuine desire on the part of the guests for the food products therein described. The use of foods "in season" is both economical and good practice. As for example when strawberries are ripe in a certain locality, people expect fresh berries to be featured in various forms in the menu. It always pays to be honest in every way with your patrons, and when foods are fresh, say so, and if food is canned, do not serve it as "fresh" food. The menu should be drawn up with an intelligent idea as to how the left-overs may be disposed of. As much of the left-over food as possible should be used the following day, cutting the waste to a minimum, always, however keeping the high standard of best quality food products at all times. The modern age has brought science into menu planning, and "dietetic balance" comes in for its share of consideration, with the selection of food combinations with the proper ratio of vitamins, fats, carbohydrates, and so forth.

Happy Medium in Menus

There should be a distinct "contrast" between courses, which tends to make the dinner more enjoyable and appetizing. For instance, if a fruit cocktail is served, a fruit salad would not be in order on the same menu, but a vegetable or some other type of salad should be substituted. The "temperature" of foods is an item of especial importance, in golf club food service. As the players come in from a hot round of golf, they are tired, thirsty, hungry, and have an appetite as keen as a whistle. If they ask for a cold meat plate and some cold drinks, be sure that the food and liquid is ice cold, serving them in dishes chilled in the refrigerator or ice. If hot orders are requested, make positive that the foods are served piping hot on hot dishes. There is nothing quite as bad as warm orange juice, or a cold steak, and the like.

There should be variety in the texture of the food served. There should be a con-trast on the menu between hard and soft foods, and whole and minced foods. The flavor of the food should be carefully watched and checked, and the dishes should not all be highly flavored, or all mildly flavored. A happy medium should be struck between the bland and highly flavored foods. The flavor should be evenly distributed throughout the product, and not just on "top" or in parts.

There should be good variety in preparation as to form, whether broiled or fried and the like. As if cream soup is on the menu, it is not good practice to serve creamed potatoes on the same bill of fare. Likewise if creamed potatoes are on the menu, you would not serve creamed onions on that setup. Pleasing color schemes are very essential to a well planned menu. Many otherwise perfect dinners or luncheons are ruined simply because of poor color combinations, or no color at all. The beginning and ending of the meal, or what is commonly known as the cocktail and dessert are two of the most important items on the menu. If a dinner is started right and finished right, it is usually bound to be successful.

Therefore, it is well to have a dash of color in the cocktail, and this accomplishes two purposes in the fruit cocktail supreme. In this set-up a large glass tumbler is filled with ice and a drop of liquid coloring matter either red or green is added which turns the ice to a brilliant color. Then the cocktail proper is set in the tumbler on a polished metal holder, and thus the cocktail is both very attractive and also icy cold when served. A fresh sprig of green parsley and a piece of bright yellow lemon cut fresh should garnish the fish dishes. Vegetables of different colors should be used wherever possible, and when feasible always avoid using two foods of the same color on the same plate. A few bits of diced carrots will greatly add to the appearance of a cabbage salad. A bright red candied cherry will decisively augment the attractiveness of a half-grapefruit or sliced oranges.

Last, but by no means least, is the problem of division of labor. This item is often overlooked, and may cause serious disaster in the food service. The menu should be planned with a view to the division of labor in the kitchen—that is just how much time the various dishes will require, the number of workers required for the different tasks, the skill necessary, and lastly the equipment on hand. Do not put
anything on the menu which your kitchen force with its equipment on hand, cannot prepare right and on time.

Proper menu making is an art, a science, and an asset. Years and years of persistent study are usually necessary before an operator can make out an attractive, well-balanced, satisfying, and profitable menu each day of the year. However, if the club steward or chef, or whoever has charge of the menus will consistently study his menus and his clientele, noting and correcting the flaws, ever striving to serve the best quality foods in the most delicious as well as the most economical manner possible, success is certain.

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