An Index to What the Greenkeeper Has to Know

By KENT BRADLEY and MELVIN B. LUCAS.

One of the indications of the constant and swift progress in course maintenance methods is the negative one of this important profession not having a solitary fairly comprehensive manual or textbook in print.

Advance has been so steady and methods formerly employed without much question have been outdated by new discoveries and conditions that a textbook on course maintenance compiled 10 years ago would not reflect best greenkeeping practice today.

Yet during the past decade golf course greenkeeping has supplied the impetus and operating technique that have been adapted to gigantically costly operations in construction and maintenance of lawns, airports, parks, cemeteries and highways. The greenkeepers' leadership in these developments has not been popularly recognized nor has the extent of greenkeepers' knowledge demanded by his job been realized even by club officials with whom he is in fairly close association.

And, to tell the truth, the greenkeeper himself rarely realizes the scope of information he has to bring into focus on his job. Almost every day another question requiring a definite answer comes to his mind although he may be thinking that things are running smoothly and work temporarily is of a routine nature.

Greenkeeping Index Begun in 1923

In 1923 Bradley began compiling a file of subjects in which the country club grounds superintendent would be interested as problems of his job. Lucas, a later graduate of Dickinson's classes at Massachusetts State college and now supt., Manchester (Conn.) CC, took the Bradley original material for a cross-indexed file of grounds maintenance subjects and prepared the list herewith.

Compiling a reference library to fill out the outline of the index would be a fulltime job for a librarian. It would be entirely impractical for a greenkeeper. But at least the highlights do show how extensive the greenkeeper's working knowledge must

Subjects Are Grouped

The figures preceding the cross-indexed subjects indicate groups as follows:

1-Management, 2-Construction, 3-Equipment, 4-Grasses and Culture, 5-Soils, 6-Irrigation, 7-Chemicals, 8Weeds, 9-Turf Insects and Animal Pests.

1—Abbreviations and Symbols.

3-Accessories: Special list, to games, grounds equipping and furnishing, fixtures. See "Equipment". List.

5-7-Acidity. See pH, soil reaction. Acidity. Lime. Base exchange.

1-Acre, Acreage. See "Areas, Surveying, Marking." 1—Agents, Agencies, See dealers, distribu-

tors, supply dealers. List.

4-5-6—Algae; See diseases, green scum, drainage, turf injuries, moisture.

5-7—Alkaline, alkalinity. See Acidity, pH, lime, base exchange, soil reaction. 1-Amortization, See depreciation of capi-

tal investments, costs, replacements. 9-Animal pests, control. See asphyxiants, gasses, poisons, traps.

1-7—Antidotes, for poisons, poison gasses.

See also emetics, emulsions.

1-Areas.

7-9—Asphyxiants, See fumigants, fumigators, gasses. List.

3-Attachments, for machines. See machines, machinery.

5-Bacteria, in soil. See Soils.

5—Base, See Alkali, Alkaline. Basic.5—Base Exchange. Term. See Soils, and Chemistry subjects. pH, acidity, etc.

5-7—Bases, see Alkalies, also under Fertilizer subject. Lime.

9-Beetles, Asiatic, Japanese, June beetles. See Entomology-insects, grubs.

4-Blights on plants. See "Brown Patch."

Diseases of grasses and plants.

1—Books: List of: Bibliography: reference according to subject, author.

4-Botany.

Bowling Greens. Lawn Bowling game.

4-Brown Patch, Brown Spots. Blights, Diseases. Dollar Patch, spot. 9—Bugs. See Entomology, Insects.

1—Buying.

5-7—Calcium. See Lime, Alkalies. Base Exchange, Fertilizers, Nutrients. Cement. See Mortar.

1-Charts. See Data, Tables.

3-Chemistry, Chemicals, Compounds.

5-6-Compaction, Soil, See Aeration, Cultivation, Tilth.

5-Composts. Also see Soils, Conditioners, Topdressings.

7-Compounds, See Chemistry, Chemicals.

2-Concrete, Portland cement, Mortar, cement.

(Continued on page 80)



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WHAT GREENKEEPER HAS TO KNOW

(Continued from page 40)

- 5—Conditioners, Soil Conditioners, See Composts, Topdressings. Physical Peat.
- 2—Construction.
- 1-Costs. See Records, amortization, depreciation, replacements.
- 5-8—Cover crops. See Ground Cover Crops. "Green manures."
- 5—Cultivation of Soil, See Tilth, Aeration.
- 4-Damping off. See diseases, Seeds.
- 1-Data: See Charts, Tables, various information, tabulated.
- 1-Dealers: See agents, agencies, Distributors. Subject, and List.
- 1-3—Depreciation, see Amortization-of capital investments - costs, replacements.
- 1-Diagnosis, diagnosing. (method) see

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1-Diary, daily work and treatments. See Records.

4—Diseases, See Blights, Diagnosis.

1-3-Distributors. See Agents, Dealers. Also Machines (list).

4-Divots. Golf term. See Patching, Plugging (method).

4-Dollar Patch, Dollar Spot. See Brown Patch, Diseases.

2-Drainage, Land.

4-6-Drought, See Wilt.

7-Dusts, chemical, see insecticides, fungicides.

5-9—Earth, Earthworms, See Entomology, Insects, Worms, Soil.

Ecology, Plant, See Indicators, Indica-

tions, Diagnosis, Soils.

Electric, Electrical, Electricity, simple fundamentals, repairs.

5-7—Elements, See Soil, Fertilizers, Major, Minor, elements, Chemistry.

-Emetics, poison, see Antidotes.

7—Emulsions, See Sprays, Solutions. 9—Entomology, Study of Insects Subject. See Insects.

3-Equipment. Term applying to games and grounds furnishing. See Accessories. Ethics.

Evaluation, prices, quality.

-Eye Spot, See Diseases, Zonate Eye

1-Fairway-s term. Golf course fairways, areas.

4-Fertilizers, subject. Fertilizing. (Also see Methods.)

-Field crops. See Cover Crops, Ground Cover Crops. "Green Manures." Le-

1-First Aid, to Injured. See Emetics, Antidotes, Safety Rules, Precautions.

1-4 Frost on grass, Frost Heave. See Winter seeding.

7-9 Fumigants, Fumigators, See Asphyxiants, Gasses, Poison Gasses.

1-Fundamentals, of study subjects. See "Why."

4-Fungi, Fungus diseases, See Blights, Diseases.

7-Fungicides, See Dusts, Sprays, Mercurials. See List, (Commercial).

9-Gasses, See Asphyxiants, Fumigants. Fumigators.

4 Germination, See Viability, Seeds, Grass Seeds.

1-Golf, The game of, requirements, etc.

4-Grasses.

4-Grass Seeds, See Seeds.

3-Greases, See Lubricants, Oils.

1-Greens, Golf, Bowling, See Bowling Greens, Lawn Bowling.

4-5-6-Green Scum, See Algae, Diseases, Moisture, Drainage.

5-Ground, Cover Crops, See Cover Crops, Green Manures, Legumes.

5-Ground Cover Plants, (under dense shade where grass will not grow).

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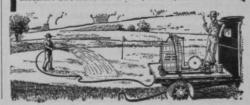
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1—Grounds, Maintenance, See Maintenance, Upkeep, Paths, Roads, Parking areas, general grounds care.

4-8—Growth, plant, Growth regulators. 9—Grubs, See Entomology, Insects.

7-9—Grub-Proofing, See Insecticides, poisons, also Methods regarding.

7-8 Herbicides, See Weed Killers, Plant Killers.

7-8-4—Hormones, plant hormones.

3-6—Hose. See Irrigation, Supplies, Water hose, Garden Hose, List.

1—How to do things. See list of ME-THODS.

1-4—Humidity—see Weather.

3—Implements; See Tools, Special List, of, use - purpose.

2—Improvements, Improving, also see Methods list.

5-7—Indicators, Indications, See Soil Tests, Ecology, Diagnosis.

1—Information, Sources of, Books, etc. Also see Data, Tables.

1-Injury: To Persons, See First Aid.

4—Injury to Plants, Summer, Winter, Insect, Fungus, See Blights, Diseases, etc.

9—Insects. See Entomology, Bugs, Worms.7—Insecticides, See List, also Sprays, Dusts.

6—Irrigation Subject, See Sprinkling, Watering, and Methods.

—Irrigation, Supplies, Sprinklers, Hose, Pumps. See Lists.

2-5—Irrigation, Sub-Surface. Also see special devices for this, and Methods.

9—Japanese Beetles, See Entomology, Insects, Grubs, Beetles.

1-Job operations.

9—June Beetles, See Entomology, Insects, Grubs, Beetles.

7—K., K 2 o, See Chemistry, Fertilizers, Potassium (Kalin).

1—Labor, See Methods. Hiring, Employment, Management, Training, Costs.

1—Landscape study.

1-2-4—Lawns. Also see Shaded, Shady Lawns.

1-2—Lawn Tennis, Game, See Tennis Courts, grass, clay, composition.

5—Legumes, See Cover Crops, "Green Manures," Field Crops.

5-7—Lesser Elements, See Minor Elements, Chemistry, Fertilizers, Soils.

5-7-9—Lime, See Calcium, Alkalies, Bases,
 Base Exchange, Fertilizers, Nutrients.
 3—Lubricants, Lubrication, see Oils,

Greases, and Lubricating METHODS. 3—Machinery, Machines. See List, any device that has mechanical moving parts, hand, engine powered, tractor

drawn.

1—Maintenance, See Grounds Maintenance, Upkeep, General.

5-7—Major Elements, See Soils, Chemistry, Fertilizers, Elements.

 Management, Turf, Grounds, Labor, Acreage.

1—Manufacturers. See Lists, names, addresses, Lines produced, Accessories, Equipment, Machinery, Tools, sundries, supplies, etc.

5-7—Materials, special purpose, not otherwise classified. See Lists.

7—Mercurials, See Fungicides, dusts, sprays.

 1—Methods, Special List, See How to do things. Words mostly end with "ING."
 5-7—Minor Elements, See Lesser Elements,

Soils, Chemistry, Fertilizers.

1—Miscellaneous, Special, not otherwise

classified, subjects.
4-5-7—Mixtures, of chemicals, seed, fertil-

izers, composts.

5-6—Moisture, See Soils, Drainage, Drouth, Drought, Humidity, Irrigation, Rain-

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fall, Weather, Watering, Sprinkling, Wilt.

- 9-Moles, See Ground Moles, Animal Pests. 2-Mortar, See Concrete, Cement, Portland Cement.
- 4-5-7-Moss, Ground, See Algae, Drainage, Fertilization, Shade.
- 5—Moss, Peat, See Peat Moss (baled), Sphagnum Moss, Soil Conditioners, Mulches.
- 3-Mowers, Hand, Powered, Tractor. Horse drawn, Reel Mowers, Sicklebar Mowers Listed under this heading, with Machinery.
- 5-Mulches, Leaf, Peat, Moss, Soil Condi-
- tioners, Winter Protections.
 4—Mycelia, Mycelium, See Fungi, Fungus, Diseases, Blights.
- Abbreviation for Nitrogen, See 7-N. Soils, Fertilizers, Chemistry, Major Elements, Nutrients.
- 5-7—Nutrients. See Soils, Fertilizers. Plant Foods.
- 3-Oil-s, See Greases, Lubricants, Also Sprays, Emulsions.
- 5-7-Organic-s, Organic Matter, Organic Materials, See Fertilizers, Soils, Mulches, Composts, Conditioners.
- 3-Paints.
- 1-Parking Areas, see Grounds, Roads, Paths.
- 4-Pathology, Plant Pathology, Botany, Pathological.
- 5-Peat, Peats, Peat Moss. See Soil Conditioners, Soils, Composts, Mulches,
- 7-P2 05, See Fertilizers, Phosphorous, Chemistry.
- 7-Plant Food-s, See Fertilizers, Nutrients. 7-8-Plant Killers, See Herbicides, Weed
- Killers. 4-7-8-9-Plant Sprays, See Sprays, Insecti-
- cides, Fungicides, Oils, Emulsions. 7-8-9—Poisons, See Animal Poisons, Poison
- Baits, Insecticides, Animal Pests. 7-9-Poison gasses, See Asphyxiants, Gasses, Animal Pests.
- 1-Polo Game, Polo Fields.

7-Potash, Potassium, See K; K2O, Fertilizers, Soils, Chemistry

Practice greens, fields, Driving ranges. 1-Prices, See Buying, Purchases-ing,

Evaluating, Values. 1-7-Precautions, See Safety Rules, Safety

Measures. 4-Propogation-ing. See Stolonizing.

Vegetating-ion. 1-7-Proportions, See Mixtures, Ratios, Rates.

1-Purchases-ing, See Buying, Prices, Values, Marketing.

1-4-Purity, Purities, See Seeds, Impurities, Minor, -Elements.

1-Putting Greens.

4-Pytheum, See Blights, Diseases.

1-Quality, See values, evaluation, buying, purchasing, marketing.

1-4-5-7—Quantity, See Rates, Amounts, Ratios.

6-Rain, Rainfall, See Weather, Irrigation, Moisture.

5-7-Rare Elements, See Minor Elements, Fertilizers, Nutrients, Soils, Chemis-

1-4-5-7—Rates, Ratios, See Proportions, Mixtures, Amounts, Requirements.

1—Records, See Weather, Labor, Costs, Treatments, Diary, Timekeeping.

1-3-4-Repairs, Buildings, Machine Overhaul, Troubleshooting, Turf Revamping, Renovation.

7-9-Repellents, Animal Pests, Insects, Insecticides.

Reports, See Records, Report Making, Presenting.

4-Rhyzome-s.

1-Roads, See Grounds, Paths, Parking Spaces, Parking Areas, Drives-ways.

1-4-5-Rolling, (see Methods), Compaction, Frost Heave.

4-Roots.

4-Root Stock-s.

1-4-Rough, Golf, see Areas.

1—Routine-s.

1-7-Safety Rules, Precautions in Work,

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1—Sand Traps, (Golf) Bunkers, Hazards.

4-8-Seeds, Grass, Cover Crop, Plow Under Crops, Weeds.

Seeding, see Methods list.

4-Shade, Shaded, Shady areas, lawns, ground covers, Grasses.

Shrubs, See Grounds, Pruning, etc.

4—Small Brown Patch, Diseases, See Dollar Spot.

4-Snow mold, See Diseases, Winter kill, Winter injury

-Sod, See Turf, Sod Nurseries, See Turf Nurseries, Sodding Methods.

Sod Web Worm, See Insects, Grubs, Entomology.

-Soils, Subject of Special, Fundamental study.

5-7—Soil Tests, See Indications, Indicators, Fertilizers, Soils, Diagnosis.

-Solutions, See Sprays, Emulsions, Nutrients.

Sphagnum Moss, See Peats, Peat Moss,

Mulches, Soil Conditioners.

1-4-5—Spike-ed, ing, Spike Discing, Spike Rolling. See Aeration, Renovating, Cultivating, ion, Renovation, Compaction, Tilth.

7-Sprays, See Solutions, Emulsions, Insecticides, Fungicides.

1-Spring Work, See Rolling.

1—Standards, of Maintenance. See Routine.

1-4-5-8-9-Steamed, ing, Soil, See Steriliz-ed, ing, Composts, Weeds, Insects.

4-Stolons, Stolonizing, See Propogationing, vegetating-ive, Grasses.

1-Study Subjects, Study Methods, See Subjects.

1-Subjects, (see above)-of Study and Discussion.

5-Subsoil.

4-Summer, Injury to turf, see Injuries.

1-2—Survey-s, ing. See Data, Tables, Charts, Areas, Maps-ing, Land, Diagnosis, Layouts, Drainage, Irrigation, Construction, Grounds.

1-Systems, See Methods, Water-Irrigation.

Survey-ing,-s, 1—Table-s. See Data, Charts, Information Tables.

1-Tee-s, See Areas, Golf.

1—Temperature, See Weather, Germination. Diseases.

1-Tennis, Tennis Courts, Game, Areas, Lawn Tennis.

1-Terms, Special category of names, expressions, also see Buying, etc.

2-4-5—Terrace-s, See Grading, Shoulder, Bank-s.

2-5—Tile, Land. See Drainage, Tiling. 3—Tools, See list, Implements, Hand Tools, Grounds, Garden, Shop.

-Top Soil.

5-4-Top Dress-ing-s, See Composts, Conditioners, Mulches, Soils.

5-7-8-9-Toxic, Toxicants, Toxicity, See Soils, Poisons.

1—Transplanting, see Patching, Plugging, Sodding, Stolonizing, also Method, Flowers, Trees, Shrubs, Plants.

1-Traps, Golf, See Sand Traps, Bunkers, Animal Traps, Pests, Insects, Trap-

Trees.

Turf, See Sod, Grass, Turf Nurseries.

Underground Rootstocks, See Grass.

Upkeep, See Maintenance, Care.
 Values, See Evaluation, Prices, Purchase, Buying, Quality.

3-Valves.

4-Viability, See Germination.

4-Vitality, See Viability, Health Plants.

6-Water, -ed, -ing, See Irrigation, Sprinkling, Moisture.

5-6-Water-holding Capacity, See Soils.

6-Weather, See Rainfall, Temperature, Drouth, Summer, -Winter, Injury, "Seasonal," Wind-s, Forecasting, Humidity, Cloudiness.

-Weeds, plants, seeds.

7-8-Weed Killers, -ing, see Herbicides.

Weights, soil, seed, data, tables, buying. -"Why"-Reason-s, diagnosis, fundamentals, causes.

4-Wilt, See drought, drouth, summer injury, Irrigation, Drainage.

4-Winter Kill, Winter Injury, Weather, Snow Mold. 1-4-Winter protection-s, see Mulches,

wind breaks, plant, shrub covers. 1-2-3—Winter Work, indoors, outdoors, See

Seasonal. 4-Zonate Eye Spot, See Eye Spot, Diseases.

DENVER'S 6-YEAR PLAN

(Continued from page 38)

tan tourney. Eight players will win annual tickets for two years duration, at association expense to play the municipal courses. In this two-year period, they also will get monthly private lessons from a professional, also at the expense of the golf association. This would normally conclude the training unless some individual gave such promise the group should desire to single him or her out for further train-

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"Attempts will be made to get private club memberships for the boys and girls showing unusual promise at the end of this six year program.

"If the association is financially able, it plans to award a university scholarship for four years to any young golfer chosen whose parents are unable to provide higher education.

"The operation of this entire program will hinge on the financial success of the first Denver Open, according to Dawson.