# Bulletin of the Green Section of the U. S. Golf Association

## A MONTHLY PERIODICAL TO PROMOTE THE BETTERMENT OF GOLF COURSES

ISSUED BY THE GREEN COMMITTEE OF THE UNITED STATES GOLF ASSOCIATION

P. O. Box 313, Pennsylvania Avenue Station, Washington, D C.

WASHINGTON, D. C., DECEMBER 31, 1921

## Contents of Volume (1921) Indexed

Arsenite of soda, for weed eradication, 127, Accounting systems, standardization of, 146. Acid phosphate (see under Fertilizers). 128-131. Acidity, soil, effect on grasses and weeds, 27, Ashes, as a top-dressing, 71. 31, 142. Axonopus compressus (see Carpet grass). of decaying leaves, 122. Bacterial inoculation, 118. Advertisements, necessity for declining, 123. Aerating turf, 152, 160. Bacterized humus, 168. Bank-holding plants, 245. Agrostis alba (see Redtop). Beetle (see also White grubs).
damage at Pine Valley from grubs of the canina (see Velvet bent, under Bent Southern Green June-beetle, 252-254. stolonifera (see Creeping bent, under Bent hickory-tree barkbeetle, 219 tenuis (see Rhode Island bent, under Bent Japanese beetle in relation to golf grounds, grasses). 210-211. vulgaris (see Rhode Island bent, under Southern Green June-beetle, 60-63, 252-254, Bent grasses). Bent grass: Alcohol, for crab-grass eradication, 90. brown bent, definition, 37. Alga, removing from ponds, 261. Alkalinity, soil, effect on grasses and weeds, 27, carpet bent, definition, 37. in vegetative propagating rows, illus-31, 43, 142. tration, 125. Ammonium chloride, for earthworm eradicacolonial bent, definition, 37. tion, 82, 212. creeping bent, definition, 37. Ammonium muriate, for brown-patch disease, lime not to be used with, 263. 151. Ammonium sulphate, as weed eradicator, 31, number of seeds per pound, 18. 118 (see also under Fertilizers). rate of seeding, 65, 95. Angleworms (see Earthworms). reaction to soil acidity and alkalinity, 27, 32. Annual bluegrass: discussion of and illustrations, 39. response to fertilizers, 28. Rhode Island bent seed, description and eradication, 151, 188, 213. illustration, 37-39. uses for, 152. Ants, extermination, 118, 143. Rhode Island bent seed situation, 162-164. Architects, The Golf Club and the Golf Course soil for, 142. South German mixed bent seed described Architect, 140-141. (illustrated), 37-39. Architecture, golf: turf grass seeds to buy and how to buy bunkers, 259. them, 14-17. contours, 67. a few opinions, 223-225. vegetative propagation of, 124-126. golf club and the golf course architect, velvet bent, description and illustration of seed, and value of, 191. 140-141. green-keeping problems involved in course-Bermuda grass: eradication of, 107. planning, 170. meditations of a peripatetic golfer, 216, for southern California courses, 107. improving by strain-selection, 95. 240, 264. platitudes on, 83-85, 216, 223-225 in southern courses, 26, 93, 214, 215, 236, reflections on bunkers, 196. 239, 254, 256.

Bermuda grass: (Continued) number of seeds per pound, 18. rate of seeding, 239. top-dressed with sand, 66. vegetative planting of, 138. Betting, 240. Bichloride of mercury (see Corrosive sublimate). Birds. Attracting birds to golf courses, 216, 228-231. robins damaging turf, 237. Blood, dried, as fertilizer, 200, 239. Bluegrass (see Annual bluegrass; Canada bluegrass; Kentucky bluegrass; Rough-stalked bluegrass; Texas bluegrass). Bone-meal, characteristics and value, 202 (see also under Fertilizers). Bordeaux (see Brown-patch disease, treatment Boulders, dynamiting, 208. Boxes for tees, arrangement, position, construction of (illustrations and drawings), 246-251. Brown-patch disease. At Morris County Golf Club, 111-112. cause of, 151. grasses resistant to, 115, 151. history, characteristics, treatment, 111-115. recovery from, 161, 237. treatment for, 111-115, 148, 150, 151, 251. Buckhorn, eradicating, 25. Budgets, preparation of, for green committee, 151. Bulletin of the Green Section, 3, 8, 10. Bunkers, architecture of, 240, 250 (see also Architecture) a wonderful bunker (at Columbia Country Club), two views of, 155-156. best kind of sand for, 220. construction of, 67, 196, 216. economically raking, and how to determine their efficiency in trapping balls, 219. reflections on, 196. sheep's fescue for covering mounds, 21, 263. Burning, from fertilizers, 205, 213, 238. the rough, 21, 151. Caddies. A valuable caddie book, 219. consideration for, 209, 240. Calcium cyanide, as a fertilizer, 200. California. Making putting-greens on a southern California golf course, 107-111. turf grasses for, 95, 214. Canada bluegrass, for Canadian fairways, 167. Carbon bisulphide. Ant extermination, 68. erab-grass eradication, 90. crawfish extermination, 47. June-beetle extermination, 63, 252, 253. killing grass, 232. white grub extermination, 118, 176, 232. Carpet-bent (see under Bent-grass). Carpet grass, description and uses (illustrated), 256-258.

for southern fairways, 26, 72, 95, 239, 256.

rate of seeding, 239, 256.

Cattle, pasturing for fertilization, 255.

Centipede-grass for southern courses, 95. Chalk as top-dressing for putting-greens, 71. Changa (see Mole-cricket). Chara, removing from ponds, 261. Charcoal, powdered, for use on greens, 192. Charleston grass, 245. Chemical weed-killers, 128-131, 146. Chickweed. A troublesome chickweed (Stellaria graminea), eradication, with illustrations, 206-207. killing chickweed with arsenite of soda (at Merion Cricket Club), 126-128. Cinder layers in putting-greens, 45, 87, 96. Clay soils, treatment of, 238. Clubs, financial problems of small, 47. nine and eighteen hole courses, number of, Coco (see Nut-grass). Collegiate instruction of green-keepers at Cornell University, 141, 149. Columbia Country Club. Fifth-hole bunker, two views of, 155-156. sixteenth hole, view of, 6. winter work at, 17, 33, 45. Compost. Compost and the construction of compost heaps (illustrated), 57-60. lime in composting, 44. making and use of compost, 26, 51-57, 71. Construction (see under Courses; Fairways; and Putting-greens). Contouring greens, 67. Copper sterate, for brown-patch disease, 114, sulfate, for removing vegetation from ponds, 261. Cornell University, green-keepers' instruction at, 141, 149. Corrosive sublimate. A new method of applying corrosive sublimate in destroying earthworms, 212. brown-patch treatment, 151. earthworm extermination, 69, 81-82, 191, 212. harmless to turf grasses, 69, 191. southern green June-beetle treatment, 253. Efficiency in golf course construction, putting-green construction at Columbia Country Club, 36. Cottonseed-hull putting-green, 244. Cottonseed-meal as a fertilizer, 200, 213, 255. Courses. Efficiency in golf course construction (Eastward Ho), 208-209. golf club and the golf course architect, 140. green-keeping problems of course planning, 170-171. most important thing on a golf course, 187nine and eighteen hole courses, relative proportion of, 72. Cover-crops for Florida golf courses, 144. Cow-manure, conducive to infestations by southern green June-beetle, 253. as a fertilizer, 255. Crab-grass (see also Goose-grass). and asset in fairways, 149 166.

Crab-grass (see also Goose-grass). (Cont'd) southern, 26, 72, 93, 214, 215, 236, 239, description, illustration, 88-92. 245, 254, 256, eradication, 88-92, 128, 149, 165, 215, 254. reaction to fertilizers, 165, 215. western Canadian, 167. gravelly places in, treatment of, 255. how we solved the problem of good fair-way turf at Pine Valley, 98-103. Crawfish extermination, 46. Creepting bent, 37 (see also under Bent-grass). Creeping Charley (see Chickweed). Cupple-lies formed by sheep's fescue, removal improving, 260. mowing, 115-117, 152-154. seeding, rate of, 65, 209. of, 263. Cutting (see Mowers and mowing). Cuttings, removal of, 180, 240. stones, removing from, 24, 98-103. Fall-grass (see Crab-grass). Cynodon grasses for California courses, 95. Fall treatment, seeding of putting-greens, 167, 192. Daddy-longlegs, treatment for, 262. some suggestions for fall treatment of put-Dandelion eradication, 25, 129-130. ting-greens, 159-161. hand-weeder (Escanaba Golf Club) (illus-Fertilizers (see also Manure). tration), 182. acid, 27, 32, 142, 239. Dear Bill letters, 63, 92, 139, 157, 183, 211. acid phosphate for putting-greens, 143. Dear Chauncey letters, 189, 258. alkaline, 27, 32, 142, 239. Digitaria humifusa (see Carpet grass). ammonium sulfate, 27, 31-33, 161, 192. sanguinalis (see Carpet grass). burning of grass from, 205, 213, 238. Disking turf, 160. chemical, 197-205, 255, 261. District green sections, advantages of, 149, 171commercial fertilizers, 197-205, 261. complete, 65, 131, 204. Philadelphia section organized, 74, 194, 195. cottonseed-meal, 200, 213, 255. St. Louis section organized, 235. effect on white grubs, 233. Ditch-hazard. Remedying a muddy ditch-hazard, 220. fertilizers for golf courses (R. J. H. De-Loach), 186-187. Drainage, and winter-killing, 46. fish-scrap, 200, 239, 255. mixing, 65, 204. improving, 45, 46, 96, 161. necessity of, 260, 264. Subirrigated greens at the St. Louis Counneutral, 27, 32, 239. try Club (illustrated), 85-87. nitrate of soda for putting-greens, 143, 161, Dried blood (see Blood, dried). 238, 239, 254. Drinking fountains, 240. rate of application, 238, 254. Dynamiting boulders, 208. putting-green fertilizers, 46, 143, 161, 238, undesirability of, for drainage, 46. 239, 254. rate of application, 65, 205, 238, 254. Earthworms. A new method of applying correlative response of grasses to, 28. rosive sublimate in destroying earthworms, tea leaves, 263. 212. tobacco stems, 192. description, habits, 75-82. young-grass fertilizers, 238. exterminating, 24, 27, 45, 69, 79-82, 191, Fescue, cutting, care advisable in, 168. 212. killers, composition of, 27, 69, 79-82. fine-leafed, as shade grass, 245. relation of, to gaps in chickens, 164. for the south, 95, 107-111, 214. season for commencing the extermination number of seeds per pound, 18. of, 45, 161. rate of seeding, 95. Eastward Ho. Efficiency in golf course conreaction of, to soil acidity and alkalinity, struction, 208-209. 32.Editorial responsibility, 146. response to fertilizers, 28. Efficiency Edgar on a golf course, 219. red, as shade grass, 245. in golf course construction, 208-209. sheep's eradicating, 263. for bunker mounds, 21, 263. Eleusine indica (see Goose-grass). Eremochloa grasses for California courses, 95. for the rough, 69, 263. Ether for crab-grass eradication, 90. soil for, 142. Experience and experiments, 230. turf grass seeds to buy and how to buy Experimental turf plots, 42-43, 95. them, 14-17. Financial problems and arrangements, 47, 243. Fairways, architecture of, 240 (see also Archi-Finger-grass (see Crab-grass). tecture). Fish-scrap (see under Fertilizers). construction of ,208-209. Fishworms (see Earthworms). crab-grass an asset in, 149, 166. Forking turf, 160. grasses for California, 95, 214. Formaldehyde for sterlizing soil, 120. northern, 14, 17, 26, 65, 120, 149, 166, Formalin for crab-grass eradication, 90. 167, 168, 190. Foundry screening devices, 251.

Garden, turf (see under Turf). Inoculation, bacterial, 118, 168. Gasoline for weed eradication, 90, 129. Inverness Club. Sodding at Inverness (illus-Geese for exterminating southern green Junetrated), 132-136. beetle, 253. spring work at Inverness, 19. Germinating layer, compost as, 57 (see also un-Irrigation (see Sub-irrigation and also under der Testing seeds). Watering). Golf, increasing popularity of, 103. Iron sulphate, for brown-patch disease, 114. Goose-grass (Eleusine indica), description and for weed-eradication, 25, 128. illustration, 184-185. Japan clover for southern fairways, 93. Grading, 33; Efficiency in golf course construc-Japanese beetle in relation to golf grounds, 210tion, 208-209. 211. Grass (see under various grass-names; also Japanese honeysuckle as a bank holder, 245. under Bunkers, Fairways, Putting-greens, and Rough). Kentucky bluegrass, for Canadian fairways. Grasses, species of, 255. Grasshoppers, control of, 166. for New Hampshire fairways, 120. Gravelly places, treatment of, 255, 260. number of seeds per pound, 18. Green committee, first meeting of, 11. rate of seeding, 65. budgets, 243. reaction to soil acidity and alkalinity, 32. membership of, 5, 7, 9. response to fertilizers, 28. program of, 8. the turf grass seeds to buy and how to buy purchasing for a green committee, 30-31. them, 14-17. Green-keepers, training of, 27, 141, 149. Kerosene emulsion, for white grubs, 62. notable green-keepers, 226-228. for southern green June-heetle, 252. Green-keeping problems of course planning, preparation of, 62, 176. 170-171. Green section, annual meeting at Chicago, 242. Labor, hiring and paying, 31. function of, 70. labor-saving device for screening top-dressmeeting of, at St. Louis Country Club, ings (illustrated), 251. September, 1921, 194. Lawn pennywort, description and eradication Washington, D. C., July, 1921, 147-152. (illustrated), 220-222. membership of, 242. Leaves, acidity of decaying, 122. organization of, 2-12. composting, 54. the Green Section extends thanks, 242. leaf-mold, composting, 54, 190. Gridiron course, 240. tea leaves as fertilizer, 263. Ground puppy (see Mole-cricket). Grubs (see Beetles, also White grubs). Lifting turf, 35, 132, 160. Lime, dust of, blowing on turf, 96. Gullies, attending to, 48. effect on grasses and on weeds, 33, 213, Gyratory screening riddles, 251. 238, 263. in compost piles, 51-60. Harrowing to eradicate crab-grass, 254, 255. in southern green June-beetle treatment, Hazards (see also Architecture). 253. natural, 240. use and abuse of lime, 43-44. remedying a muddy ditch hazard, 220. use of, 55, 60, 71, 119, 142, 186, 201, 213. Heal-all, eradication of, 25. Local limitations of golf course practice, 72. Hickory-tree barkbeetle, 219. Holes, advisability of making new holes fre-Manure, composting, 52-60. quently in spring, 24. cow manure as fertilizer, 255. arrangement and length of, 224-225. effect of, on white grubs, 233. nine and 18 hole courses, number of, 72. effect of, on southern green June-beetle, Honeysuckle as bank holder, 245. 253. Humus, bacterized, 168. horse manure as the best fertilizer, 46, 51, barnyard manure the best form of, 65. 65, 143, 239. commercial humus, when to use, 96, 213. as top-dressing, 71, 236, 239. cost of, 259. sheep manure, rate of application, 208. humus-producing materials and the making value of, 54, 262. and use of compost, 51-60. vitality of weed seeds in, 27, 120. lime used with, 41, 213, Mascarene grass, use of, and description, 47. May-beetle (see White grubs). muck, use and toxicity of, 26, 53, 71. peat, use and toxicity of, 53, 71. Meditations of a peripatetic golfer, 216, 240, toxicity of, 26, 28, 53, 65, 71, 213. use of, 26, 28, 51-60, 190, 213, 255. Hunan grass for southern courses, 95. Membership fee in Green Section, 3, 8, 74, 122.

Hydrochloric acid for crabgrass eradication,

Hydrocotyle rotundifolia (see Lawn penny-

wort).

membership of Green Section, 242.

at, 231-235.

Mercuric chloride for brown-patch disease, 114.

Merion Cricket Club, fighting the white grub

Mole cricket, West Indian, characteristics of, Pinehurst, N. C. Producing turf on poor land at Pinehurst, 254-255. and control measures (illustrated), 72, 104-106. Pine Valley Golf Club, solving the fairway turf Moles, traps for, 68. problem at (illustrated), 98-103. Moorestown Field Club, view of creeping-bent damage at Pine Valley from grubs of the nursery, 181. southern green June-beetle, 252-254. Moss, eradication of, 119, 130. Pipe, size and kind of, and depth of laying, 68. Most important thing on a golf course, 187-182. sub-irrigated greens at the St. Louis Coun-Mowers and mowing: try Club (illustrated), 85-87. fairways, 115-117. Plantain, eradication of, 25, 129. fescue, 168. Poa annua (see Annual bluegrass) horse-drawn, makes of, 67. Poa trivialis (see Rough-stalked bluegrass). improvising a mowing machine at Glen Echo Country Club (illustrated), 152-Poison-bait for grasshoppers, 166. Polysulphide poison for earthworms, 82. Ponds, removing alga from, 261. lawn-mower and its care, 177-180. Potash as a fertilizer, 142, 203, 239. power-mowers for fairways, 115-117. Potassium cyanide as ant exterminator, 118. putting-greens, 21, 168, 238. white grub exterminator, 176, 232-234. removal of cuttings, 180. turf stimulant, 234. questionnaires on tractors and fairway Preparation of green committee budgets, 243. mowers and on putting-green mowers, Purchasing: 218. a district green section's purchasing com-Mowrah meal as an earthworm exterminator. mittee's good work, 195 79-82. preparation of budgets, 243. Muck (see Humus). purchasing for a green committee, 30-31. units of quantity in purchasing seeds, 21. Muriate of potash, in Commercial Fertilizers, 197-205. turf grass seeds to buy and how to buy them, 14-17, 47, 180. Mushroom soil, as a top-dressing, 35. nature and value of, 52, 262. Putting-greens, aerating turf of, 160. architecture of, 67, 240 (see also under where obtainable, 71. Architecture) Nicotine in southern green June-beetle treat-California, making putting-greens on a ment, 253. southern California golf course, 107-111 Nitrate of soda (see also under Fertilizers): (see also under Grasses under Puttingapplied in mixture with corrosive subligreens). mate, 26. Nitric acid, for crab-grass eradication, 90. care of, 187-189, 236. constructing and cost of, at Columbia Nursery (see under Turf). Country Club, 33-36. Nut-grass as a weed, 254, 262. at Inverness, 132-136. at Eastward Ho, 208-209. Oiled sand greens, 109-111. Olcott turf garden, South Manchester, Conn., contouring, 67. cottonseed-hull greens, 244. account of, and illustration, 22-23. draining, 96, 161, 188. One thing leads to another, 164. efficiency in golf course construction, 208-Osterdamia japonica (Palm Beach grass), 95. 209. fall treatment of, 159, 167, 192, 213, 236. Palm Beach grass, 95. fertilizing, 161, 213, 236, 239, 254. Panicum sanguinale (see Crab-grass). grasses for, Californian, 95, 107-111, 214. Paradichlorobenzine, for June-beetle exterminanorthern, 14, 66, 168, 191, 213. tion, 63. southern, 26, 94, 95, 107-111, 144, 214, Paris green, for mole-cricket extermination, 72, 106. 215, 236, 239, 254. Paspalum sanguinale (see Crab-grass). green building in midwinter at Washing-Pasturing for fertilization, 255. ton, D. C., 33-36. Pearlwort, eradication of, 69. mowing, 21, 168, 238. Peat (see under Humus). redtop in, 26, 167, 192. Pennywort, description of (illustrated), 220reseeding, 143, 159, 192, 243. sand greens, converting to grass greens, eradication of, 216, 220-222. 237. Perrywinkle, as a bank-holder, 245. oiled sand greens, 109-111. Philadelphia District Green Section, organizaseeding, rate of, 65, 94, 95, 209, 243. shady, treatment of, 192. purchasing committee's good work, 195.

Phosphatic fertilizers, 201-202, 239 (see also un-

der Fertilizers).

Pigeon-grass, eradication of, 128.

soil for, depth of and quality, 46, 66.

greens).

southern, summer treatment of, 144 (see

also under Grasses under Putting-

```
Putting Greens (Continued)
                                                       Seeds (see also under Putting-greens; Fair-
     top-dressing, 26, 51-60, 66, 71, 94, 192, 236. weeding, 150, 187-189.
                                                         ways; Rough).
                                                           number per pound, 18.
      without grass, 244.
                                                           purchasing, 14-17, 21, 47, 119, 180, 243. testing, 16, 38, 47, 119, 214.
 Quacks, 218.
                                                           turf grass seeds to buy and how to buy
 Questionnaires, announcement of, 218.
                                                             them, 14-17.
                                                           weed seeds, vitality of, in manure, 27, 120.
 Redtop, cheap grades of, 142.
                                                       Seedsmen, names of, furnished, 47.
     fairway grass, 17, 65, 93, 120, 190. price of, as compared with its value, 167.
                                                           methods of, commended, 180.
                                                       Service bureau, 8, 10, 11.
     putting-green grass, northern, 142, 143, 167,
                                                       Shade grasses, 119, 245.
Shaded putting-greens, treatment of, 192.
        168, 192.
          southern, 26, 107, 144, 214, 215, 236,
                                                       Shanahan, John, 226-228.
            239.
                                                       Sheep manure (see under Manure).
     rate of seeding, 65, 143, 214, 237.
                                                       Shepherd's-purse, eradication of, 128.
     seed, description and illustration, 37-39.
                                                       Signs to place on tees, 235.
     number of seed per pound, 18.
turf grass seeds to buy and how to buy
                                                       Silver crab-grass (see Goose-grass).
                                                      Small clubs, financial problems of, 47.
Small salad, 50.
        them, 14-17.
 Reminders. Constant reminders, 235.
                                                       Sod and sodding:
 Reseeding putting-greens, 143, 159, 192.
                                                           composting, 54-60.
 Remedying a muddy ditch hazard, 220.
                                                           cutting instruments, descriptions and illus-
 Resolutions founding Green Section, 5.
                                                             trations, 34-35, 132-136.
Rhizoctonia solani (see Brown-patch disease). Rhode Island bent (see under Bent grasses).
                                                           green building in midwinter at Washing-
                                                             ton, D. C., 33-36.
 Riddles, gyratory, for screening top-dressings,
                                                           putting-greens, 161.
   251.
                                                           sodding at Inverness (illustrated), 132-136.
 Rolling. Rolling the turf, 36.
                                                       Sodium arsenite in weed eradication, 126, 128-
     southern green June-beetle treatment, 253.
                                                        131.
     spring rolling, value of, 68.
                                                      Sodium eyanide, beneficial effects of, on grass,
     weight of rollers, 191.
                                                        234.
Rosa wichuriana, as a bank-holder, 245.
                                                           daddy-longlegs exterminator, 262.
Rough, burning of, 24.
                                                           earthworm exterminator, 81.
     grass for, 69, 263.
"rough" and "half-rough," 240.
                                                           southern green June-beetle exterminator,
Rough-stalked bluegrass, for shady conditions,
                                                           white grub exterminator, 176, 231-235.
     119, 245.
                                                      Sodium fluorid, for white grubs, 176.
Rubble for drainage, 45.
                                                      Soils (see also under Acidity, Alkalinity, and
Rye-grass, perennial, eradication of, 192.
                                                        Toxicity).
     putting-green grass for the south, 26, 94,
                                                           acid, treatment of, 27.
       214, 239.
                                                           analyses of, value of, 48.
     seeds, number per pound, 18.
                                                           bacterial inoculation of, 118.
                                                           classification of, 48.
St. Augustine grass, 245.
                                                           clay, treatment of, 238.
St. Louis Country Club, club-house, view of, 2.
                                                           depth and quality of, 46, 66.
     Green Section meeting at, September, 1921,
                                                           describing, 69.
       194.
                                                           samples of, sending, 69.
     sub-irrigated greens at (illustrated), 85-87.
                                                          sandy, treatment of, 101.
St. Louis District Green Section organized, 235,
                                                          sterilizing, 119.
Salt in sea sand, 66.
                                                          testing, 260.
     for killing white clover, 238. for killing Poa annua, 151.
                                                      Sorrel, eradicating, 119.
                                                      South, grasses for (see under Putting-greens
Sand and water boxes for tees, arrangement
                                                        and Fairways).
  and construction of (drawings and illustra-
                                                          making putting-greens on a southern Cali-
  tions), 246-251.
                                                             fornia golf course, 107-111.
    bunker sand, best kind of, 220.
                                                      South German mixed bent (see under Bent
    greens (see under Putting-greens).
    putting-green uses for, 46, 66, 71, 94.
                                                      Species of grasses, 255.
    salt in sea sand, 66.
                                                      Spiking turf, 152, 160.
    sand-hill land, producing turf on, 254.
                                                      Spraying machines, necessity of washing after
    soil, sandy, treatment of, 101.
                                                        use of, 144.
Screening devices for top-dressing (illus-
                                                      Spring work; at Inverness, 19; 24, 68.
  trated), 251.
                                                      Sprinkling (see Watering)
Seeding (see under Putting-greens; Fairways;
                                                      Stellaria graminea (see Chickweed).
```

Sterlizing soil, 119.

Rough; and various grass names).

Stones, removing, 24, 208. Street sweepings, composting, 54. Sub-irrigated greens at the St. Louis Country Club (illustrated), 85-87. kind of tile to use, 45, 96. Subscription price of THE BULLETIN, 8, 122. Sulphur, brown-patch treatment, 114. earthworm extermination, 69. fertilizer, 201. Sulphuric acid for crab-grass eradication, 90. Summer-grass (see Crab-grass). Swamp soil, use of and testing, 260. Syntherisma humifusum (see Crab-grass). sanguinale (see Crab-grass). Tea leaves as fertilizer, 263. Tankage, as fertilizer, 239. Tees, architecture of, 264. boxes for, arrangement and construction (illustrations and drawings), 246-251. care of, 47, 117. signs to place on, 235. Tennis courts, construction of, seeding, fertiliz-Testing seeds for purity and germination, 16, 38, 119, 214. soil for toxicity, 260. Texas bluegrass in southern turf, 254. Tile, for drainage, 45, 85-87, 96. Timothy, number of seeds of, per pound, 18. Tobacco stems as fertilizer, 192. Top-dressing, 26, 35, 51-60, 66, 71, 94, 192, 261, 263.screening devices for, 251. Top soil, depth of, for putting-greens, 46. Toxicity of soil materials, 26, 28, 53, 190, 260. Tractors, Improvising a mowing machine (illustrated), 152-154. power mowers for fairways, 115-117. questionnaire on, 218. weight of, limit of, 67. Trampling, benefits of, 71. Trees, removing, 208. hickory-tree barkbeetle, 219. Turf gardens, experimental plats for, 42, 95, 138. first turf garden in America (Olcott, South Manchester, Conn.), account of, with illustration, 22-23. Moorestown Field Club creeping bent nursery, view of, 181. turf nursery, 138.

Turfnut, 173.

Vegetative propagation (see under Bent grasses). Velvet-bent (see under Bent grasses). Vinca as a bank-holder, 245. Water boxes for tees, arrangement and construction of (illustrations and drawings), Watering, fairways at Pine Valley, 99. novel sprinkling device (Wawonowin Golf Club) (illustrated), 136-138. sprinklers, makes of, 70, 166. sub-irrigated greens at the St. Louis Country Club (illustrated), 85-87. when to water, 167. Weeds (see also under various weed-names): ammonium sulphate and, 31. chemical weed-killers (illustrated), 128-131, introducing with manure, 27. lime and, 43, 142. most important thing on a golf course, 187seeds, vitality of, in manure, 120. some suggestions for fall treatment of putting-greens, 159-161. White arsenic for West Indian mole-cricket, 106. White clover, effect of lime on, 43. eradicating, 25, 33, 118, 238. seeds, number of, in pound, 18. White grubs. Control of white grubs on golf links (illustrated), 174-177. fighting the white grub at Merion (rate of application; cost of treatment; effect of fertilizers on the grubs), 231-235. Wichurian rose as a bank-holder, 245. Winter, green building in midwinter at Washington, D. C., 33-36. manuring of putting-greens in winter, 236. trampling, beneficial, 71. winter-killing of putting-greens, 46, 143.

33-36, 45. Wire-grass (see Goose-grass).

Yard-grass (see Goose-grass). Yarrow as a golf turf grass, 142.

Zoysia tenuifolia (see Mascarene grass).

winter work at Columbia Country Club, 17,

#### THE GREEN SECTION OF THE UNITED STATES GOLF ASSOCIATION

The Green Section of the United States Golf Association was organized in the winter of 1920-1921. Its objects are to promote the betterment of golf courses, with especial reference to the problems of growing turf, but not excluding anything that directly concerns golf clubs.

The Green Section is conducted by the Green Committee of the United States Golf Association. One-half of the members of the Green Committee are appointed by the president of the United States Golf Association and the other half are elected by the delegates and permanent members of the Green Section.

Th Green Committee publishes The Bulletin of the Green Section of the United States Golf Association, a monthly educational journal, containing no advertisement, but including anything of value or interest concerning golf courses that may have developed in the experience of the various clubs, besides technical, articles by scientific authorities. By this means there are made available to all both the things that are desirable to do and those which are to be avoided.

The Green Committee also maintains a Service Bureau, which furnishes information to golf clubs that are members of the Green Section, on the purchasing of seeds, fertilizers, implements, etc., and on any questions or problems which they may care from time to time to lay before the Committee with regard to the betterment of golf courses.

The delegates to the Green Section of the United States Golf Association meet once a year to consider the administration of its business affairs and elect Green Committee members and to discuss various problems that are of general interest. No one may be appointed as a delegate to the Green Section who has any direct or indirect financial interest in the sale of any article, material or service used in the upkeep of golf courses.

### THE GREEN COMMITTEE OF THE UNITED STATES GOLF ASSOCIATION

\*C. V. Piper, Chairman,
Dr. R. A. Oakley, Vice Chairman
\*F J. Marshall, Vice Chairman, wan, Vice Chairman, Inverness Club, DR. R. A. OAKLEY, E. J. MARSHALL, V W. A. ALEXANDER, WM. F. BROOKS, C. B. BUXTON, A. H. CAMPBELL, A. H. CAMPBELL,
N. STUART CAMPBELL,
N. STUART CAMPBELL,
STERLING E. EDMUNDS,
WM. C. FOWNES, JR.,
DR. WALTER S. HARBAN,
DR. THIOS. P. HINMAN,
A. J. HOOD,
FREDERIC C. HOOD,
NORMAN MACBETH,
W. P. STEWART,
JAMES L. TAYLOR,
WYNANT D. VANDERFOOL,
W. R. WILLETT,
FALAN D. WILSON,
FRANK L. WOODWARD, FRANK L. WOODWARD,

Old Elm Club, Minikahda Club, Dallas Country Clu Toronto Golf Club Toronto Golf Club,
Agawam Hunt Club,
St. Louis Country Club,
Oakmont Country Club,
Columbia Country Club,
Druid Hills Golf Club,
Detroit Golf Club,
The Country Club,
Wilshire Country Club,
Audubon Golf Club,
Ekwanok Country Club,
Morris County Golf Club,
Louisville Country Club,
Pine Valley Golf Club,
Denver Country Club, Denver Country Club,

Washington, D. C. Washington, D. C. Toledo, Ohio. Fort Sheridan, Ill. Minneapolis, Minn. Dallas, Tex. Dallas, Tex.
Toronto, Ont.
Providence, R. I.
St. Louis, Mo.
Pittsburgh, Pa.
Washington, D. C. Washington, D. Atlanta, Ga. Detroit, Mich. Brookline, Mass. Los Angeles, Calif. New Orleans, La. Manchester, Vt. Manchester, Vt.
Convent Station, N. J.
Louisville, Ky.

PERMANENT MEMBERS Hugh I. Wilson, Merion Cricket Club, Haverford, Pa. F. H. Hillman, Washington, D. C. W. H. Walton, Washington, D. C. Lyman Carrier, Washington, D. C.

ddress all communications P. O. Box 313, Pennsylvania Avenue Station, Washington, D. C.

<sup>\*</sup> Executive Committee member.