
— THE —

State Agricultural College

The Agricultural Experiment Station.

INDEX BULLETIN, No. 18.

Indexing First Seventeen Bulletins of the Station, for

VOLUME I.

Fort Collins, Colorado.

DECEMBER, 1891.

Bulletins are free to all residents of the State interested in Agriculture in any of its branches, and to others as far as the edition will permit. Address the EXPERIMENT STATION,
Fort Collins, Colorado.

PREFATORY NOTE.

In presenting this Index Bulletin, the following is offered in explanation. The object is to index, for the first volume of the Agricultural Experiment Station, all Bulletins issued to date, numbering with this, eighteen, and closing with the year 1891.

The titles of Bulletins are printed in small capital letters. The bulletin numbers are printed in black type, smaller than the ordinary type, in which page numbers are set. In repeating words from topics above, dashes are employed as ditto marks.

Second editions of Bulletins No. 8, on Alfalfa, and No. 13, on The Measurement and Division of Water, have been issued. An asterisk before the bulletin number designates all references to these editions.



Director.

INDEX.

VOL. I. Bulletins 1-17.

- Acres of fruit in Northern districts. 17:6.
Egeria tipuliformis. (see *Sesia tipuliformis*).
Agricultural Section, circular from. 5:3.
Agropyrum divergens. 12:65.
— *glaucescens*. 12:138.
— *unilaterale*. 12:63.
— *strigosum*. 12:65.
— *tenerum*. 12:65.
— *violaceum*. 12:63.
Agrostis alba. 12:30.
— *canina*. 12:43.
— *exarata*. 12:40.
— *scabra*. 12:43.
ALFALFA, ITS GROWTH, COMPOSITION, DIGESTIBILITY, ETC. 8.
— ash of. 8:10.
— compared with other grasses. 8:13.
— crude fiber of. 8:10.
— cutting and curing. 8:5.
— different stages of growth. 8:11.
— digestibility of. 8:22-24.
— dodder. 8:6.
— dung analysis. 8:19.
— fat of. 8:10.
— growth of. 8:4.
— irrigation of. 8:6.
— protein of. 8:10.
— parasites of. 8:6.
— preparation of soil for. 8:4.
— refuse hay analysis. 8:20.
— seed per acre. 8:5.
Alkali, effect on plants. 9:18.
Alopeurus alpinus. 12:95.
Aristotulus. 12:91.
Alypia octomaculata. 6:12.
Ammophila longifolia. 12:99.
Analysis, alfalfa, ash of. 8:10.
— alkali. 9:17.
— Allihis's and Sachsse's.
— animal urine. 8:17.
— comparative method potato starch. 7:18-19.
— — — hydrochloric and sulphuric acids. 7:20.
— — — different stages of growth. 8:11.
— dung from alfalfa feeding. 8:19.
— forage plants. 12:131.
— grasses for hay. 12:133.
Analysis of Claymore lake water. 9:25.
— potato. 7:21.
— refuse hay. 8:20.
— sugar beets, sp. gr., per cent. 14:13.
— soil, Arkansas valley. 9:13.
— — — on which tobacco grew. 10:10.
— starch washed out. 7:20.
— tobacco ash. 10:13.
— water, Cache la Poudre. 9:22.
Andropogon furcatus. 12:96.
— *scoparius*. 12:96.
Annis, Frank J., Secretary. 1:2. 3.
Aphis, cabbage and cauliflower. 6:4.
— — and turnips. 6:19.
— on elm. 6:18.
APIARY, EXPERIMENTS IN. 5.
— report on. 5:8.
Apple leaf-beetle. 6:2-11.
— leaf-hopper. 15:19.
— tortrix. 6:17.
Arapahoe County, fruit interests of. 17:6.
Aristida basiramea. 12:117.
Arsenites for codling moth. 15:8-11.
Artesian basins, see Denver, San Luis. 16:13-14.
— water, discovery of, Colorado. 16:12.
— supply, limit of. 16:24.
— — — in San Luis valley. 16:25.
ARTESIAN WELLS OF COLORADO. 16.
— advantages in. 16:8.
— — cause of decreased flows. 16:9.
— — circumstances effecting supply. 16:6.
— — conditions for (ill). 16:4.
— — deep. 16:9.
— — danger of poor construction. 16:10.
— — effect on flow of cleaning. 16:16.
— — for irrigation. 16:7.
— — importance of casing. 16:11.
— — in Colorado. 16:12.
— — irrigation from. 16:22.
— — on the plains. 16:27.
— — possible extent of irrigation from San Luis valley. 16:27.
— — to test pressure. 16:11.
Barley. 2:11-16.
Barnyarn manure, analysis of. 9:15.
Bean, injured by leaf-beetle. 6:18.
Beans. 2:3.
Beckmannia erucaeformis. 12:122.

- Bees, preparing for winter. 5 : 8-11.
 — report on apiary. 5 : 8.
 Beets. 2 : 4.
 — injured by insects. 6 : 4.
 — leaf-beetle. 6 : 18.
 Bell Bros.' orchard, statistics of. 17 : 16.
 — Judge J. C., statistics of his orchard. 17 : 16.
 Bent County, fruit interests of. 17 : 14.
 Blackbirds feeding on insect larva. 6 : 17.
 Blount, A. E. 2 : 8.
 Botany, Horticulture and Entomology, circular from. 5 : 4-5.
 — — paper from. 6 : 2.
 Boulder County, fruit interest of. 17 : 7.
 — — fruit product, 1890. 17 : 8.
 Bouteloua racemosa. 12 : 121.
 — hirsuta. 12 : 121.
 Box-elder leaf-roller. 6 : 17.
 Bromus breviriaristatus. 12 : 51.
 — ciliatus. 12 : 51.
 — Kalmii var. Porteri. 12 : 53.
 — secalinus. 12 : 53.
 — unioloides. 12 : 52.
 — Mexicana. 12 : 52.
 Brose, C. Max, apiary report. 5 : 8-11.
 Bruchus piri. 6 : 14.
 Buchloe dactyloides. 12 : 136.
 Buckwheat. 2 : 9.
 Buhach insect powder. 15 : 21.
 Cabbage injured by plant lice. 6 : 4.
 — caterpillar (*P. rapae*). 6 : 8, 14.
 — — remedies for. 6 : 6.
 Cacocacia senifera. 6 : 17.
 Canale Villoresi. 13 : 25. *13 : 30.
 — — module (see Cippoletti).
 Capillary water of soil. 9 : 8.
 Carpenter, L. G. 13. 16.
 — S. W., Montezuma County fruit. 17 : 21.
 Carpocapsa pomonella. 6 : 9. 15 : 4.
 — — early appearance of. 6 : 2.
 Carex rupestris. 12 : 127.
 Carrots. 2 : 4.
 Cassidy, James. 4. 6. 7 : 1-16. 8. 10 : 5-8. 12.
 — quotations from. 15 : 6.
 Catacrosa aquatica. 12 : 62.
 Cauliflower, injured by plant lice. 6 : 4.
 Cenchrus tribuloides. 12 : 117.
 Ceramia picta. 6 : 15.
 Cereals. 2 : 9.
 Chemical changes in digestive tract. 8 : 21.
 — Section, circular from. 6 : 21.
 Chryramela exclamacionis. 6 : 18.
 Cinna arundinacea, var. pendula. 12 : 114
 Cippoletti, Cesare. 13 : 25. *13 : 31.
 — Module, formula. 13 : 30. *13 : 36.
 — — illustrated. 13 : 26. *13 : 31.
 Cippoletti Module. 13 : 27, 30. *13 : 32, 37.
 — — tables. 13 : 32-34. *13 : 43-46.
 Clark, Max, box. 13 : 12. *13 : 16.
 Claymore Lake, water analysis. 9 : 25.
 Clovers. 2 : 7.
 — alfalfa. 2 : 7.
 — Red or June. 2 : 8.
 Coburn, W. S., statistics of his orchard. 17 : 16.
 Codling Moth. 6 : 9. 15 : 3, 4.
 — — early appearance of. 6 : 2.
CODLING MOTH AND GRAPE VINE LEAF-HOPPER. 15.
 — — bands for. 15 : 13.
 Coefficient of purity of juice. 14 : 7.
 Colllops migriceps. 6 : 18.
 Colorado, artesian basins in. 16 : 15.
COLORADO, ARTESIAN WELLS OF. 16.
 Conotrachelus leucophaetus. 6 : 18.
 Contraction, conditions for complete. 13 : 22, 23. *13 : 27-29.
 — in flow of water. 13 : 21. *13 : 26.
 Coreus tristis. 6 : 9.
 Corn, broom. 2 : 6.
 — field. 2 : 7.
 — Kaffir. 2 : 6.
 Cottonwood beetle. 6 : 17.
 Crawford, Gov., orchard on Rapid Creek. 17 : 20.
 Cubic foot per second. *13 : 7.
 Currant borer (imported). 6 : 12.
 — — appearance of. 6 : 2.
 — worm, *E. ribearia*. 6 : 8.
 Cuscuta epilinus. 8 : 8.
 — Gronovii. 8 : 8.
 Dalmatian insect powder. 15 : 21.
 Damping off of tobacco plants. 10 : 5.
 Danthonia intermedia. 12 : 87.
 — Californica. 12 : 87.
 Delta County orchards. 17 : 17.
 — fruit, by express. 17 : 18.
 Denver artesian basin. 16 : 15, 16.
 Deschampsia caespitosa. 12 : 72.
 — Danthonioides. 12 : 71.
 — flexuosa. 12 : 71.
 Deyeuxia Canadensis. 12 : 48.
 — Lapponica. 12 : 47.
 — stricta. 12 : 47.
 — sylvatica. 12 : 44.
 Digestibility of alfalfa. 8 : 13.
 — crude fiber. 8 : 20.
 Diplachne fascicularis. 12 : 109.
 Distichlis maritima. 12 : 105.
DISTRIBUTION OF SEEDS AND PLANTS. 3.
 — — — Secretaries' duties. 3 : 1.
 — — — statutory provisions for. 3 : 2.
 Dividing box. 13 : 5. *13 : 5.

- Division of the State into fruit districts. 17 : 5 .
DIVISION OF WATER, MEASUREMENT, 13 .
 Divisor defined. $13 : 5$. * $13 : 6$.
 described. $13 : 6, 7$. * $13 : 8, 9$.
 Farmers' Union Ditch. $13 : 8$. * $13 : 10$.
 illustrated. $13 : 7$. * $13 : 9$.
 in water measurement. $13 : 5$. * $13 : 6$.
 of Elche, Spain. $13 : 8$. * $13 : 10$.
 of Lariat Ditch. $13 : 7$. * $13 : 10$.
 of Lorca, Spain. * $13 : 11$.
 Doulder, description of. $8 : 7$.
 Duty of water, experiments, 1887. $14 : 7$.
 — from artesian wells. $16 : 8, 27$.
 Elements found in plants. $9 : 5$.
Elymus Canadensis. $12 : 58$.
 — (species?) $12 : 61$.
Sitanion. $12 : 62$.
Empoasca mali. $15 : 19$.
Eragrostis poaoides. $12 : 78$.
 — *poaoides*, var. *megastachya*. $12 : 81$.
Purshii. $12 : 78$.
Erythroneura (see *Typhlocyba*). $6 : 20$.
Eudamus tityrus. $6 : 2$.
Eulitchia ribearia. Inj. gooseberries. $6 : 8$.
Eurotia lanata. $12 : 28$.
Eurycreon rantalidis. $6 : 13$.
 Evaporation. $1 : 9$.
 — from streams and canals. $1 : 10$.
 Experiment ground. $2 : 2$.
 Experiment Station, departments in. $5 : 2$.
EXPERIMENTS IN (1887) PHYSICS AND ENGINEERING. 7 .
 — with potatoes. $4 : 2$.
 — tobacco. $4 : 15$.
 Express shipments of fruit from Delta County. $17 : 18$.
 — Fremont County. $17 : 14$.
 — Mesa County. $17 : 20$.
 False chinch bug. $6 : 3, 16$.
FARM DEPARTMENT. 2 .
 Fat of alfalfa. $8 : 10$.
 Feeding experiment with alfalfa. $8 : 14$.
 — stuffs, digestion co-efficient of. $8 : 22$.
 — value of sugar beets. $11 : 12$.
 Felton, Pres. W. B., his orchard. $17 : 13$.
 — letter from. $15 : 18$.
 Fertility of the soil. $9 : 12$.
 Fertilizers for potatoes. $4 : 12$.
Festuca elatior. $12 : 39$.
 — *microstachys*. $12 : 35$.
 — *tenella*. $12 : 35$.
 — *ovina*, var. *brevifolia*. $12 : 36$.
 — *Kinzigii*. $12 : 36$.
 Flax. $2 : 5$.
 Forbes, Dr., quotation from. $15 : 9$.
 Forest insects. $6 : 17$.
 Formula, rectangular weir. $13 : 9, 22$.
 — * $13 : 27$.
 — trapezoidal weir. $13 : 30$. * $13 : 36$.
 — triangular weir. * $13 : 38$.
 Francis, J. B., experiments. $13 : 20, 24$.
 — * $13 : 25, 29$.
 — weir formula. $13 : 22$. * $13 : 27$.
Eatonia obtusata. $12 : 106$.
 Fremont County, fruit shipped by express from. $17 : 14$.
 Fruit districts. $17 : 5$.
 — first planting in Fremont Co. $17 : 12$.
 — grown in Colorado. $17 : 26$.
 — in St. Vrain valley. $17 : 7$.
 Fungus diseases. $17 : 21$.
 Garden web-worm. $6 : 3$.
Gillette, C. P. 15 .
Glyceria aquatica. $12 : 103$.
 — *distans*. $12 : 103$.
 — *nervata*. $12 : 100$.
 — *pauciflora*. $12 : 100$.
 Goff, Prof., spraying experiments by. $15 : 9$.
GRAINS, GRASSES AND VEGETABLES. 2 .
Grape Alypia, octomaculata. $6 : 12$.
Grape-vine leaf-hopper $6 : 20$. $15 : 3-18$.
 — — burning. $15 : 21$.
Graphephorum Wolfii. $12 : 95$.
Grapta, early appearance of. $6 : 2$.
 — interrogationis. $6 : 18$.
Graptodera foliacea. $6 : 11$.
GRASSES, SOME COLORADO. $12 : 2 : 7$.
 — **GRAINS AND VEGETABLES**. $2 : 3-15$.
 Grass for hay or pasture. $12 : 133$.
 Grasshoppers. $6 : 19$.
 Grass Valley. $17 : 20$.
 Hay necessary to increase live weight. $8 : 20$.
Heliothis armigera. $6 : 19$.
Hellebore, as an insecticide. $6 : 5$.
 — for false chinch bug. $6 : 16$.
Hemp. $2 : 5$.
Hierochloa borealis. $12 : 106$.
Haltica striolata. $6 : 19$.
Hordeum jubatum. $12 : 118$.
Humus in soils. $9 : 5$.
Inch. $13 : 10, 13$. * $13 : 13, 17$.
 — Colorado statute. $13 : 12$. * $13 : 16$.
 — difficulties as unit in water measurement. * $13 : 7$.
 Index. $18 : 2$.
INDEX BULLETIN. 18 .
 Ingersoll, C. L., Director. $7 : 2, 10 : 3-4$.
 — $11 : 3-6$. $12 : 3-4$.
 Insect enemies. $17 : 22$.
 Insecticides. $6 : 2-3$.
 — modes of application. $6 : 7$.

- INSECT PESTS, TWO.** 15.
Insect powder. 15 : 21.
INSECTS AND INSECTICIDES. 6.
Insects injurious to tobacco. 4 : 20.
 — sending for name. 5 : 4.
IRRIGATION—ARTESIAN WELLS OF COLORADO. 16.
 Irrigation from artesian wells. 16 : 22.
 — measurement of amount of water used in. 1 : 6, 7.
 — of alfalfa. 8 : 6.
 — — potatoes. 4 : 3.
 — possible extent from artesian wells in San Luis valley. 16 : 27.
Jefferson County fruit interest. 17 : 7.
Juncus Balticus. 12 : 125.
 — *bufonius.* 12 : 126.
 — *Mertensianus.* 12 : 126.
Kerosene, as an insecticide. 6 : 6.
 — emulsion. 6 : 7.
 — — for cabbage and turnip aphid. 6 : 19.
 — — false chinch bug. 6 : 16.
 — — grape leaf-hopper. 15 : 19. 6 : 20.
 — — preparation of. 15 : 20.
Koeleria cristata. 12 : 110.
Larimer County, area in fruit. 17 : 10.
Leersia oryzoides. 12 : 105.
Lema trilineata. 6 : 19.
Libellulidae. 6 : 19.
Lights for codling moth. 15 : 13.
Lina scripta. 6 : 17.
List of fruits grown in Colorado. 17 : 26.
Lolium perenne. 12 : 44.
 — — var. *Italicum.* 12 : 109.
London purple, for codling moth. 15 : 8.
 — — injuring foliage. 6 : 10.
Lupinus argenteus. 12 : 128.
 — — var. *argophyllum.* 12 : 128.
Luzula spadicea, var. subcongesta. 12 : 127.
Lytta atrata. 6 : 19.
 — *cinerea.* 6 : 18.
McClelland, J. S., notes on his orchard. 17 : 11.
Marc, 14 : 7.
Mead, Elwood. 1.
MEASUREMENT AND DIVISION OF WATER. 13.
 Measuring box. 13 : 5. *13 : 5.
 — boxes, two classes of. 13 : 5.
Measurement, value of system of. 13 : 3.
 *13 : 4.
Medicago sativa. 8 : 3.
Melica spectabile. 12 : 95.
Mesa County, express shipments of fruit from. 17 : 20.
 — — fruit interests of. 17 : 18.
Meteorological and Irrigation Engineering Section, circular from. 5 : 5.
Microbes and nitrification. 9 : 5.
Millets. 2 : 9.
Module in water measurement, defined. 13 : 5. *13 : 6.
 — *Isabella I., cause.* 13 : 14. *13 : 18.
 — *Marseillais canal.* 13 : 13, 14. *13 : 17, 18.
 — *Max Clark box.* 13 : 12. *13 : 16.
 — *Milanese.* 13 : 10-13. *13 : 14-17.
 — of Montrose canal. 13 : 14. *13 : 18.
 — flow not constant. 13 : 11. *13 : 15.
 — conditions for. 13 : 9. *13 : 12.
 — Italian. 13 : 10. *13 : 13.
 — see inch, weir spill-box.
Montrose County, fruit in. 17 : 15.
 — fruit shipped by express from. 17 : 16.
Muhlenbergia glomerata. 12 : 81-137.
 — *gracilis, var. breviaristata.* 12 : 83.
 — *gracillima.* 12 : 84.
 — *Wrightii.* 12 : 82.
Munroa squarrosa. 12 : 126.
Nicotine in tobacco. 10 : 12.
Nitrification. 9 : 5.
Nucleus defined. 5 : 9.
Nusius augustatus. 6 : 16.
Oats. 2 : 12.
O'Brine, D. 7 : 17-23. 8. 9. 10 : 8-15.
 11 : 7-12. 12. 14.
Oncia, 13 : 12. *13 : 16.
Ongarth's tree protector. 6 : 6, 16.
 — — for False chinch bug. 6 : 16.
Orchard, W. S. Coburn, statistics. 17 : 16.
 — Gov. Crawford's, on Rapid Creek. 17 : 20.
Organic matter in soil. 9 : 4.
 — — in grains and tobacco. 9 : 4-6.
Origin of alfalfa. 8 : 3.
Oryzopsis cuspidata. 12 : 92.
Over production of fruit. 17 : 22.
Panicum capillare. 12 : 33.
 — — var. *minimum.* 12 : 33.
 — *crus-galli var. echinatum.* 12 : 34.
 — *dichotomum.* 12 : 29.
 — *glabrum.* 12 : 34.
 — *sanguinale.* 12 : 35.
 — *virgatum.* 12 : 29.
 — *virgatum, var. glaucephylla.* 12 : 29.
Parasites of alfalfa. 8 : 6.
Paris green for Codling moth. 15 : 8.
 — — — Flea beetles 6 : 19.
 — — — on apple foliage. 6 : 10.
Parsnip butterfly. 6 : 3.
Paspalum glabrum. 12 : 91.
Peas. 2 : 4.
Pea weevil. 6 : 14.
Pennock, C. E., his nursery. 17 : 11.

Pemphigus galls. 6 : 17.
 Persian insect powder. 15 : 21.
Phalaris arundinacea. 12 : 88.
 -- *canariensis*. 12 : 88.
Phleum pratense. 12 : 113.
 -- *alpinum*. 12 : 113.
Phragmites communis. 12 : 118.
PHYSICS AND ENGINEERING. 1
Pieris oleracea. 6 : 15.
 -- *prodidice*. 6 : 15.
 -- -- appearance of. 6 : 2.
 -- *rapae*. 6 : 8.
 -- -- appearance of. 6 : 2.
Platioderma scripta. See *Lins scripta*.
 Plains, artesian wells on. 16 : 27.
 Plant lice on cabbage and cauliflower. 6 : 4.
 Plants, elements found in. 9 : 5.
 -- influence, chemical on. 9 : 11.
 -- sending for name. 5 : 45.
Pluvia brassicæ. 6 : 15.
Poa alpina. 12 : 13.
 -- *alsodes*. 12 : 16.
 -- *andina*. 12 : 14.
 -- *arctica*. 12 : 25.
 -- *Caesia*. 12 : 13.
 -- -- var. *stricta*. 12 : 16.
 -- *compressa*. 12 : 13.
 -- *Eatonia*. 12 : 25.
 -- *flexuosa*, var. *occidentalis*. 12 : 21.
 -- *lævis*. 12 : 12.
 -- *laxa*. 12 : 18.
 -- *pratensis*. 12 : 18.
 -- *serotina*. 12 : 22.
 -- (species ?) 12 : 22.
 -- *sylvestris*. 12 : 25.
 -- *tenuifolia*. 12 : 26.
Polygonum monspeliensis. 12 : 99.
Populus angulatus 6 : 17.
 Potato, injured by leaf-beetle. 6 : 18.
 Potatoes, ash of. 7 : 18.
 -- best soils for. 4 : 3, 14.
 -- best time to plant. 4 : 14.
 -- cutting seed. 4 : 10.
 -- description of varieties. 4 : 57.
 -- fertilizers for. 4 : 12.
 -- irrigation. 4 : 3.
 -- Kentucky Agricultural Experiment Station. 7 : 21.
 -- methods of culture. 4 : 9.
 -- most prolific varieties. 7 : 4.
 -- results of experiments. 4 : 14-15.
 -- starch analysis. 7 : 19.
POTATOES AND SUGAR BEETS. 7.
 -- table of varieties. 4 : 4-5. 7 : 5.
POTATOES AND TOBACCO. 4.
 -- under mulch. 4 : 10.

Potatoes, without irrigation. 4 : 11.
 Prefatory note to index. 18 : 2.
 Preparation of soil for alfalfa. 8 : 4.
 -- -- sugar beets. 11 : 4.
 Pressure of artesian wells, to test. 16 : 11.
 Profit per acre of tobacco. 10 : 7.
 Protein of alfalfa. 8 : 10.
 Pumps for applying insecticide. 15 : 14.
Pyrethrum. 6 : 6.
 -- for leaf-hopper. 15 : 19.
 Queen bee, bridal flight of. 5 : 10.
 -- -- egg laying of. 5 : 10.
 -- -- how produced. 5 : 9.
 Quick, Walter J., Director. 18 : 2.
 Rainfall, measurement of. 5 : 6.
 Rain gauge, description of. 5 : 6.
 Reservoir, water analysis. 9 : 24.
Rhyncites bi-color. 6 : 18.
 Royal Jelly, use of. 5 : 9.
 Rye. 2 : 12.
 San Luis artesian basin. 16 : 17-27.
 -- -- -- extent of possible irrigation. 16 : 27.
 -- -- -- limit of supply from. 16 : 25, 27.
 -- -- -- map. 16 : 16.
 -- -- -- relation to ancient lake. 16 : 19.
 -- artesian wells, cost. 16 : 21.
 -- -- -- irrigation from. 16 : 22.
 -- -- -- pressure. 16 : 20.
 -- -- -- source of supply. 16 : 26.
 -- -- -- temperature. 16 : 20.
 -- well of C. Bucher. 16 : 23.
 -- Experiment Station. 9 : 13.
 -- Valley, characteristics. 16 : 17, 18.
 -- formation. 16 : 19.
 -- fruit in. 17 : 21.
Saperda calcarata. 6 : 17.
Schedonnardus Texanus. 12 : 122.
 Schubler gives weight 1 cu. ft. soil. 9 : 6.
 Secretary, duties of. 3 : 1.
 Seedling varieties of potatoes. 4 : 8.
 Seeds and plants. 3 : 1.
 -- -- application for. 3 : 4.
 -- -- distribution of. 3 : 1.
 -- -- record required. 3 : 4.
 -- -- sending for name. 5 : 4.
Selandria cerasi. 6 : 17.
 -- *rubi*. 6 : 18.
Sesia (Egeria tipuliformis). 6 : 2, 12.
Setaria Italica. 12 : 105.
 -- *glauca*. 12 : 104.
 -- *viridis*. 12 : 104.
 Shropshire, R. W., statistics of orchard. 17 : 19.
 Silicic acid in plants. 9 : 6.
 Soil, alkali in. 9 : 16.
 -- Arkansas Valley Exp. Station. 9 : 13.

Soil, capillary water of. 9:8.
 — character of formation. 9:3-6.
 — chemical properties of. 9:11.
 — College analysis of. 9:13-16.
 — color. 9:7.
 — influence of moisture on. 9:9.
 — on which tobacco grew. 10:10.
 — physical properties. 9:6-8.
 — porosity of. 9:7.
 — rich and poor ash on. 11:8.
 — temperature. 9:10.
 — weight of one acre. 9:13.
 Soils, alkali, how to reclaim. 9:20.
 — amount dissolved by water. 9:9.
SOILS AND ALKALI. 9.
 — fertility of, depends on. 9:12.
 — how formed. 9:3.
 — named. 9:6.
 — specific gravity of. 9:7.
Solanum Jamesii. 4:13.
 — tuberosum. 4:13.
 — var. boreale. 4:13.
SOME COLORADO GRASSES. 12.
Sorghum. 2:9.
 Southern and Southwestern fruit interests. 17:20.
 — fruit district. 17:12.
Spartina cynosuroides. 12:110.
Spill-box. 13:15. *13:19.
 — illustrated. 13:16, 18. *13:20, 22.
Sporobolus airoides. 12:74.
 — asperifolius. 12:73.
 — cryptandrus. 12:78.
 — cuspidalus. 12:77.
 — depauperatus. 12:73.
 Spraying machinery. 15:14.
Squash bug. 6:3, 9.
 — remedy for. 6:6.
 Statutory provisions for seed distribution. 3:2.
Steele, C. W., history of his orchard. 17:18.
Stephens, W. O., statistics of his orchard. 17:17.
Stipa comata. 12:70.
 — Mongolica. 12:69.
 — spartea. 12:69.
 — (species?) 12:70.
 — viridula. 12:66.
SUGAR BEETS. 11.
SUGAR BEETS AND POTATOES. 7.
 — ash on rich and poor soil. 11:8.
 — chemical analysis. 7:22.
 — coefficient purity juice. 14:7.
 — composition of. 11:10.
 — description of plant. 14:5.
 — expenses attending ten acres. 14:6.

Sugar Beets, feeding value. 11:12.
 — loss in dressing. 14:7.
 — preparing ground for. 14:4.
SUGAR BEET PROGRESS BULLETIN. 14.
 — quality of different sections. 11:11.
 — requirements for success. 11:6.
 — table of analysis. 14:9.
Sugar factory, Grand Island, Neb. 14:3.
 — how extracted. 11:5.
 Summary of potato experiments. 4:14-15.
 Sweetened water for the Codling moth. 15:13.
Systema mitis. 6:18.
 Table of potatoes. 4:4-5.
 Table of seedling potatoes. 4:8-9.
Tortrix roseana 6:17.
Telea polyphemus. 6:18.
Tent Caterpillar. 6:18.
Textile Plants. 2:5.
THE FRUIT INTERESTS OF THE STATE. 17.
The Wild Potato. 4:13.
TOBACCO. 10.
 — analysis of. 10:12.
TOBACCO AND POTATOES. 4.
 — ash analysis. 10:13.
 — barn. 4:21.
 — boxing. 4:23.
 — bulking. 10:6.
 — burning qualities of. 10:11.
 — climate, soil. 10:9.
 — crops 1888-9, Comparison. 10:7.
 — cultivation of. 4:19.
 — curing. 4:22. 10:6.
 — cutting and harvesting. 4:21.
 — damping off. 10:5.
 — experiment results. 4:25.
 — fertilizers for. 10:10.
 — insects. 4:20.
 — irrigation of. 4:19.
 — nicotine in. 10:12.
 — on manured land. 4:23.
 — on unmanured land. 4:24.
 — planting out. 4:19.
 — profit per acre. 10:7.
 — pruning. 4:20.
 — raising plants in hot beds. 10:5.
 — soils for. 4:10.
 — sowing seed. 4:18.
 — stripping. 4:22.
 — suckering. 4:21.
 — sweeting. 4:23.
 — varieties of. 4:16-19.
 — water. 15:21.
Tomato, Injured by Leaf-beetle. 6:18.
 — worm. 6:3.
Torcher for Leaf-hopper. 15:21.
Town Ditch. 9:23.

- Trifolium eriocephalum. 12 : 125.
 Trisetum subpicatum. 12 : 84.
 Trupanea apivora. 6 : 19.
 Two Insect Pests. 15 : 3.
 Typhlocyba vitis. 15 : 18.
 Upton, W. B., statistics of his orchard.
 17 : 16.
 Variations in albuminoid nitrogen.
 12 : 132.
 — in ash. 12 : 132.
 —— crude fiber. 12 : 132.
 —— fat. 12 : 132.
 —— moisture. 12 : 132.
 —— nitrogen free extract. 12 : 132.
 Vanessa antiopa. 6 : 17.
 — milberti. 6 : 2.
 Varieties of potatoes. 4 : 4, 5.
 — tobacco. 4 : 16-18.
 Vegetables. 2 : 3.
 VEGETABLES, GRASSES, GRAINS. 2.
 Veratrum album. 6 : 5.
 Veterinary Section, Circular from. 5 : 7.
 Warren's Lake water analysis. 9 : 25.
 Water capacity of soil. 9 : 8.
 — capillary of the soil. 9 : 8.
 Weir, Conditions of Rectangular. 13 : 23,
 27, 28. *13 : 28, 33, 34.
 Water, constant flow obtained. *13 : 13.
 — culture. 9 : 11.
 — duty of, experiments, 1887. 1 : 4-7.
 — exhaled by crops. 9 : 8.
 WATER, MEASUREMENT AND DIVISION OF.
 13.
 Water, movement in soils. 9 : 6.
 — passed through skin and lungs. 8 : 16.
 — soil dissolved by. 9 : 9.
 — utilizing small supplies. 16 : 9.
 — value of. 16 : 8.
 —— rights. 16 : 7.
 Web-worm, Garden. 6 : 3.
 Weir. 13 : 5. *13 : 5, 13.
 — accuracy of. 13 : 19. *13 : 24.
 — Cippoletti Trapezoidal tables. 13 : 32-
 34. *13 : 43-46.
 — D. B., quotations from. 15 : 7.
 — Francis' experiments on. 13 : 20, 24.
 *13 : 25, 29.
 —— formula for flow over. 13 : 22.
 *13 : 27.
 — rectangular, tables. 13 : 35-38. *13 : 40-42.
 — triangular. 13 : 38.
 — velocity of approach allowable. 13 : 28.
 *13 : 34.
 Weld County, fruit in. 17 : 8.
 Western fruit district. 17 : 14.
 Wheat. 2 : 10.
 — experiment results. 2 : 14.
 — special. 2 : 13.
 White Hellebore as an Insecticide. 6 : 5.
 Wild Potatoes, yield of. 4 : 14.
 Yield of sugar per acre. 7 : 23.
 Yields of varieties of Potatoes. 4 : 4-5.
 Yield of Wild Potatoes. 4 : 14.
 Yuma soil analysis. 9 : 13.

