

NOTES ON CONTINENTAL IRRIGATION WITH PLATES

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Notes on Continental Irrigation with Plates by Henry Ling Roth

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HENRY LING ROTH

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WITH PLATES.

BY

HENRY LING ROTH.

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The investigations which led to these Notes were undertaken at the request of Mr. H. A. Munro Butler Johnstone, M.P., and in conjunction with Mr. S. B. Indebeky. The notes published are merely intended to give agriculturists an idea of the practical application of water to irrigate land; for information concerning the carriage of the water to the fields, either by canals or pumping-works, the reader is referred to the technical hand-books on the subject.

CONTENTS.

I. BOUCHES DU RHONE (FRANCE).

Introductory.—Canal de Craponne—Canal des Alpines—Slopes—Distributors.

1. *Meadow Irrigation.*—System at Arles—Preparation of land—First Operations—Time to Irrigate—Amount of Water—Cost—Size of Fields.

2. *Arable Land Irrigation.*—Its Infancy—Increased Produce—Cost and Returns—System at St. Remy—Size of Fields—Slope of Land—Time Required—Quantity of Water—Time to Irrigate—Care in Watering—Vineyards—Coze of River Durance.

II. VALENTIA, GRENADA, AND SEVILLE (SPAIN).

Irrigation of Arable Land.—Climate—System at Valentia—Size of Fields—Time Required—Velocity of Water in Distributors—Delivery per Second—President of Board of Agriculture at Valentia—Time to Irrigate—Insufficient Water—Slope of Fields—Distances Apart of Distributors at Grenada—System at Grenada—Delivery per Second—Time to Irrigate—Mountain Conduit—Primitive Plough—Transfer of Soil—Various—Norias of Seville—Terrace Irrigation—Crossing Canals—Subdivision of Land.

III. MILAN AND LUCCA (ITALY), AND DOUAI (FRANCE).

Bed-work Irrigation near Milan.—Winter Irrigation—Total Submersion—System at Lucca—Beet-root Irrigation at Douai.

IV. SIX MAIN CONCLUSIONS ARRIVED AT.

APPENDIX.

TABLE OF MEASURES QUOTED.

LIST OF PLATES.

- I.
- Fig. 1. Plan of an Irrigated Meadow near Arles.
- II.
- " 2. Plan of an Irrigated Meadow at Burzacotte.
- III.
- " 3. a, b, and c. Sluices in use in the neighborhood of Arles.
- IV.
- " 4. Sketch to illustrate preparation of land for a main distributor.
- " 5 and 6. Wheat fields near Molièges ready for irrigation.
- " 7. Sketch to illustrate branched *bourrelets*.
- V.
- " 8. Wheat field near Grenada prepared for irrigation.
- VI.
- " 9. Do. do. do.
- VII.
- " 10. Small Conduit on Mountain side, near Grenada.
- " 11. Section of Terrace Irrigation.
- " 12. Plan and Section of Canal crossed by a road on same level.
- " 13. Plan and Section of Bed-work Irrigation near Milan.
- VIII.
- " 14. Plan of an Arable Field near Lucca.
- " 15. Sketch-Plan and Section of weir on River Arno.
- " 16. Beet-root Field prepared for Irrigation at Masny.

CONTINENTAL IRRIGATION.

I. BOUCHES DU RHONE (S. OF FRANCE).

THE rich country lying around the mouths of the Rhône has, owing to its position and the peculiar climatological influences which surround it, from time immemorial suffered severely from excessive droughts. To the rural population the consequent distress has been great, for early in the summer all young vegetation not artificially watered withers up. The sun withdraws the moisture from the ground and this moisture is carried away by the "mistral," a fierce cold wind which rushes down the valley of the Rhône, leaving the country it traverses dry and bare. The warm moist air is carried away across the Mediterranean, and is replaced by a cold dry air from the north. The cold air as it sweeps along is gradually warmed, and as it increases in temperature so does it increase its power of taking up and retaining moisture. This now warm moist air being continually removed and replaced by a colder air, the desiccating power of the atmosphere is always fully active. The country being apparently cut off from rain-bearing winds by the *Chaine des Alpes*

is not recompensed for these continuous withdrawals, the young crops consequently dry up, and with them the attendant hopes and income of the farmer.

It is now nearly 400 years since the pioneer of modern irrigation, Adam de Craponne, noticing the distress which appeared to occur every seven years out of eight, bethought himself of building an irrigation canal by means of which he would overcome the natural obstacles to successful farming. Until the first Revolution, little or no use was made of the canal, but since then it has become highly prized, and farmers are only too glad to avail themselves of one of their greatest artificial blessings. At present every year witnesses a few new fields irrigated for the first time, and no field once irrigated is ever again allowed to suffer want of water, so that the system is extending slowly but surely. To show how the proximity of the canal, or its conduits, has improved the value of the land, a direct proof of the utility of irrigation works, it may be mentioned that land which previously sold for 1000 to 1200 Francs per Hectare (£16—19 per acre), will, now that it is connected with the canal, fetch as much as 6000 Francs per Hectare (£96 per acre).

Since the building of the Canal de Craponne (80 Kilometres, or $49\frac{1}{2}$ miles, long) several others have been built, of which, in this district, the Canal des Alpines (120 Kilometres, or $74\frac{1}{2}$ miles long) appears to be the most important. The Canal de Craponne