

as beds of sandstone or sandy layers. They are largely formed of minute organisms and have frequent layers rich in corals, and others in which water worn pebbles of the volcanic rocks of the Mount Eagle series are buried in fine, chalky sediment. The inclination of the Kingshill series is very flat. The largest variation from the horizontal which I have seen is 12° - 15° . Usually the readings are 3° to 8° , and often the beds are practically flat. The Kingshill series reaches a maximum altitude above the sea at Bulowsminde, near its eastern edge, where the summit is 615 ft. and the inclination is flat. The total thickness may therefore reach 500'-600', perhaps even more, but over the general area covered by these beds a large proportion of this section has been removed by erosion. There is some evidence that these beds, in the central belt of the island and as noted by the late John T. Quin, Esq., in his interesting book on the geology of St. Croix, called "The Making of an Island" lie in a broad flat trough or syncline whose axis pitches at a very low angle downward to the southwest. The inclination of a strata is, however, only a few degrees, and while the trough or synclinal structure is the one associated with artesian wells where we have porous, water bearing beds, (usually sandstone) contained between impervious beds such as clays and outcropping where they can gather in and conduct downward to the hollow of the trough, the rainwater which falls on their exposed portions, we lack, so far as my observations go, good porous, permeable beds. I would not therefore look for a copious flow, even if water were struck in the Kingshill series. Pumping wells, suitable for watering stock seem to me to be the ones which, were water encountered, would be the most probable expectation. I cannot bring myself to believe that any supply abundant enough for irrigation would be encountered.

The best and most practical plans for increasing and conserving the water supply seem to me to be two. In accordance with the first, wells could be dug to depths of approximately fifty feet or less on the flats which are opposite valleys and amphitheatres in the mountains and hills. At times of heavy rains much water falls in these catchment areas, and while a good proportion runs off, some seeps into the ground at the mouth of the valleys. The ground may be expected to be open textured and porous down to the bed-rock and to consist of steam gravels and sand washed down from the hills. By selecting relatively low points, as indeed has been already often done, water supply for stock can be had. In selecting sites, regard should be had for the probable line of flow of underground water along the general line of surface drainage. There are many such locations not yet utilized on the island, and the

expense involved is not great. Drive wells would answer far enough away from the hills to avoid the very coarse rocks which might have been washed down from the hill country at times of torrential floods.

The second plan would be the storage of water by dams. One such plan which seems to me feasible is already being studied by Mr. Folmer Andersen, the Manager of the Bethlehem Sugar Works. Two hills of the Kingshill limestones are sufficiently near each other just north of the South Road, to give good reason to study the practicability of an earth-work dam, with a tight core-wall. Enough water in rainy times could apparently be impounded to furnish a supply for irrigation during drought so as to carry the sugar crop through the worst stages of dryness.

Study the local conditions along other water courses might reveal additional opportunities for similar structures.

In conclusion I may summarize as follows:—

1st. I think it highly improbable that any deep boring will furnish sufficient water for irrigation.

2nd. The most that can be expected is a supply for stock.

3rd. Additional supplies for stock over present sources may be found in wells on the flats opposite catchment valleys in the mountains.

4th. In a few specially favored localities along the larger streams, dams for water storage of sufficient magnitude for irrigation in times of drought are apparently feasible and are worthy of careful study, as regards tight foundation strata, resistant spillways, and the other engineering features of earthenwork dams, so as to prevent disastrous floods from the collapse of the dams under unusual rainfall.

5th. While I realize the hardships involved in the recent protracted dry times, I am hopeful that the worst is now past and that the country will experience a gradual increase in the rainfall for several years to come. Dry times and wet times come in recurrent cycles.

In reaching these conclusions, I wish to acknowledge the great assistance I have received from my colleague and companion Dr. N. L. Britton, Director of the New York Botanical Garden.

Respectfully,

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TELEGRAMS.

ST. CROIX STATION.

New York, April 18th.—German marks, which had been "pegged" by the German Government at 00.48 cents for two months, despite a tremendous increase in note circulation, broke to 00.33 cents in today's early trading, one of the most violent reactions in recent months.

Local exchange dealers were unable to explain the sudden drop, but said that it probably indicated the withdrawal of Government support. The recent speeches of Foreign Minister Von Rosenberg and Dr. Stressman, leader of the German people's party before the Reichstag which had been interpreted here as overtures for peace with France, also were regarded as a sentimental factor. Overnight Berlin despatches, however, reported that the Reichsbank had shipped an additional 135,000,000 gold marks to the bank of England, making a total of 300,000,000 gold marks deposited there in connection with the Government policy to "aneg" the mark during the Ruhr struggle.

London, April 18th.—At the 53rd annual meeting of the association of Chambers of Commerce the President, Sir Arthur S. Bena, referring to the commercial chaos caused by the war, said Britons must turn to the Dominions to take Russia's place as exporter of food-stuffs and the Germans place as buyer of our goods. The new world must be called upon to restore the balance of the old. The new world today is not the United States, it is the British Empire. We must call on the British Empire to make good the ravages of war and the ruin, which I hope is only temporary, of Europe. It is in the Dominions, among our own people, that our destiny lies as a political and moral force and as a civilizing influence and in my judgement there also lies our commercial destiny. Mr. Arthur Balfour, of Sheffield President elect, moved a resolution, which was carried, expressing the opinion that the present uncertainty over the reparations question, is detrimental to world peace and is preventing the improvement of industry and commerce.

Winnipeg, April 18th.—The fifty-foot bridge over a tributary of the Red River at St. Jean, about 20 miles from Winnipeg, on the Canadian National railway from Winnipeg to Minneapolis, was carried away by flood waters on Tuesday night. Nothing remains but the piers. A very serious flood threatens Winnipeg and many homes in Brooklands, a municipality adjoining Winnipeg to the west, were cut off tonight. The snow still shuts out the light in many front windows in the western parts of the city. All the vacant lands are like lakes and as the creeks leading to the rivers are blocked with snow, the water cannot get away. The Assiniboine river at Brandon, Manitoba, thirteen miles west of Winnipeg, rose five feet today. The ice is expected to go out on Saturday. A great stretch of water is moving down from the west and north-west on Winnipeg, seeking the Red and Assiniboine rivers. The water is on a level with the pavements tonight on the western outskirts of the city and an aquatic condition prevails over large sections of the western suburbs.