

less extent, often wholly, so that the chalk becomes entirely structureless; and it has been shown that the absence of structure becomes more apparent in proportion to the greater thickness of beds formed. The further transformation was traced by Walther in a recent tertiary formation at Syracuse, where he found, in the exposed quarries of *Latomia dei Capuccini*, the remains of *Lithothamnium* sufficiently distinct for determination, especially where the interstitial material had been weathered out. The stone, however, blended from this indistinctly structural form to the wholly structureless or homogeneous.

The explanation of this complete transformation, as given by the author, is also of interest. The organic substances, which in the living plant amount to about five or six per cent, were found, in the tertiary chalk above referred to, to be about a third of one per cent. The larger part had thus disappeared; and as the chalk was purely white, showing the absence of all bituminous matter, it was evident that the remaining organic matter had slowly been oxidized, producing carbonic matter, which had obliterated by its dissolving action in the surrounding or percolating water all evidences of structure. In such cases where the plants were exposed to water not impregnated with the carbonic acid, the structure is retained more or less unimpaired.

This explanation of the formation of chalk in shallow waters — for algae must live within a few hundred feet of the surface, where light can reach them — gives a solution of various problems in geology, especially of the more recent chalk-beds. Whether it will apply to the extensive structureless chalk-beds of western Kansas at all, is doubtful.

CYPRUS UNDER BRITISH RULE.

At a recent meeting of the Society of arts, in London, Mr. G. Gordon Hake read a paper on the condition of Cyprus since its occupation by the British, his object being to show the improvements that have taken place under the new administration.

In ancient times Cyprus was one of the most fertile and prosperous countries in the world, its copper and its timber being important articles of commerce. But under the Turkish administration the island deteriorated greatly, as most countries do under Turkish rule. One traveller, near the end of the last century, describes Famagusta, at the time of his visit, as a "melancholy picture of Turkish desolation," and as "almost depopulated, although, in the time of the Venetians, the finest city in the island, and renowned for its brave defence against the infidels." He adds, "The desolation we observed at Famagusta ex-

tended itself along the country. We passed by the ruins of several Greek villages." Another traveller also gives a sad account of Cyprus at a rather later date. "The island," he says, "was formerly one of the richest and most fertile in the world. It is much exposed to the ravages of locusts. On their approach, every kind of verdure disappears, and they even gnaw the very bark off the trees. The Turks will not permit their destruction, because they consider them as sent by the Almighty."

This melancholy condition of the island was due in part to maladministration of justice, and in part to a vicious system of taxation. The Turkish government took tithes of the produce of the land, and these tithes were farmed in the spring of each year to merchants and speculators. This system had its natural results in a loss of revenue to the state, and the impoverishment of the cultivator, whom it involved in the toils of the money-lender, as well as the tithe-farmer, and thus checked the productiveness of the island to an enormous extent. The land, falling out of cultivation, became the breeding-ground of locusts. The cultivators of the soil in many cases gave up their calling in despair, and obtained a living by cutting down and selling trees, and the collection of resin. The wholesale destruction of trees reacted on the climate, and restricted the rainfall; so that between locusts, tithe-farmers, and neglect of the forests, the island, at the time of the occupation, was rapidly becoming more like a barren, rocky desert than a fertile and naturally favored country.

These, then, were the chief evils to be remedied by the English on their arrival in Cyprus. It was at once made plainly known that no farming of tithes would be allowed under British rule; and it was decided to adopt the following course in regard to the same. The Turkish plan of assessment was to be followed, but, instead of collecting the tithes in kind, they were to be valued, and, leaving the peasant free to deal with his crop as he pleased, the money value was to be collected as an ordinary tax later in the year. The sole exceptions to this were the tithes on silk and carobs. The greater portion of these two products being exported from the island, it was arranged to collect the tithe on export, and so save the cost of assessment; and the result, besides being successful from the imperial point of view, has given great satisfaction to the agriculturists.

After this financial reform the locust and timber questions remained to be dealt with. The Cyprus locust is indigenous to the island; and its presence is, without doubt, largely due to past

mismanagement and neglect of the soil, inasmuch as it is only on rocky waste ground that the female insect will lay her eggs. The locust-plague is therefore the result of inadequate cultivation of the soil, consequent upon a deficiency of population, coupled with an insufficiency of trees; though their increase may be largely attributed to the Mussulman theory of resignation, which would not, in former times, permit their destruction on account of the belief that they were sent by the Almighty. For some years prior to 1862 the destruction of crops from this cause was very large, and the plan of egg-collection was then tried, without success, by the Turkish government. This led Mr. Richard Mattei, a land-owner of Cyprus, to commence a series of experiments, which resulted in the invention of his system of traps and screens. Mr. Mattei had the good fortune to secure the assistance of the Turkish governor, Said Pacha, a man of exceptional intelligence and energy; and in 1870, after long effort, the locusts were by this means almost exterminated. Not wholly, however; for in 1875 they reappeared, and, another governor being in power, they were allowed to increase until the time of the British occupation. Early in 1879, measures were adopted by the English government, both by the employment of Mr. Mattei's trap and screen system and by encouraging the collection of locust-eggs, for which they offered a considerable price. These measures have been completely successful, as the locusts that appeared last year were comparatively few in number, and did no appreciable damage, and any future visit may be looked forward to with complacency.

But the forests of the island also demanded and received the attention of the new authorities. The forests were placed under control, and the destruction of wood prohibited, moderate supplies being permitted for native wants. The indiscriminate pasturage of goats has been stopped, and a large number of trees have been planted, the chief species being Aleppo pine, cypress, carob, ailantus, oak, mimosa, eucalyptus, and Pinus pinea. The effect of these measures has been favorable; but the restoration of the forests must necessarily be a work of time.

Again, it was necessary to reform the administration of justice throughout the island. This was effected by a complete re-organization of the department of justice under the direction of the home government. The most salient features of the scheme were the formation of a court of appeal, composed of two qualified English judges, the appointment of an English judge to preside in every district, and the establishment of a number of village judges to deal with petty civil

cases. It included also the adequate payment of the native judges, although their number was gradually reduced to a considerable extent, and likewise established a system of jail deliveries by judges on circuit, similar to that which prevails in England.

The effect of these and other less important reforms on the commerce of the island has been highly beneficial. The abolition of the tithe-farming system, and the adoption of the more generous as well as more politic measure, whereby the agriculturist was permitted to deal with his crop as he pleased, the collection of the tax being delayed till a later season, when he should have had ample time for the conversion into money of the produce of his holding, had a most favorable influence on the particular industries affected, and consequently on the trade of the island generally. The volume of foreign trade, which in Turkish times was estimated at £1 10s. per head of the population, amounted, in 1879, to £2; in 1880, to £2 10s.; and in 1881, to £3 per head, since which time steady increases have been recorded. The net result of British occupation to Cypriot commerce may be fairly estimated by a comparison of the respective imports and exports for 1878, the last year of Ottoman rule, with those of 1884-85. The imports for 1878 were £177,651; for 1884-85, £304,375. The exports in 1878 were £157,328; last year they amounted to £287,521; and the figures were still higher the year before, especially as regards the imports.

Mr. Hake concluded his paper with a few remarks on the further improvements which he deems necessary for the prosperity of the island. Leaving out of account all minor measures, such as developing certain crops, he thinks there are three things which remain for the English to do. The first is to become the purchasers of the fee simple of the island, instead of being tenants at will, as they are at present; the second is to spend money, even to the extent of getting into debt, in order to plant the mountain-ranges, and especially the northern one that runs down the Mesaorian plain; and the third is (again getting into debt, if necessary) the establishment of a railway from Morphou to Famagusta, leaving its after-development to time, and to put the harbor of Famagusta into proper repair for mercantile use.

JEVONS'S LETTERS AND JOURNAL.

MRS. JEVONS has done well to collect these letters and journals of her late husband. The world is always interested in the personal history

Letters and journal of W. Stanley Jevons. Ed. by his wife. London, Macmillan, 1886. 8°.