

THE CINCHONA INDUSTRY.

Now that we are in the midst of practical experiments with the cinchonas, and as the College of Agriculture has sent out a number of seedlings for test in different parts of the State, the interest in the subject of quinine production is a direct one to Californians. We see it stated that the Eastern interest in the subject is also growing, not with the hope that cinchonas can be grown at the East, but that our country should do something to ascertain whether some of the varied climates within our national borders cannot do something to augment the falling supply of the famous febrifuge. There was a bill introduced by Mr. Kelly, of Pennsylvania, at the last session of Congress, to start an inquiry and experiment under government auspices, into the practicability of cinchona growing. The bill was lost in the crush at the close of the session, but it may be expected to come up again and will probably receive vigorous support at the East, for there seems more disposition to look favorably upon tests for quinine than upon ventures in tea culture. We trust it may prevail, for with the evidence now in hand there is reason to believe that California should be thoroughly assayed for cinchona qualities.

Cinchona culture in general is progressing. The Philadelphia Ledger, drawing its information from foreign sources, says, some of the facts are already known to our readers, others are new. For 40 years England has been industriously engaged in establishing bark plantations in the upland regions of India and Ceylon, the West Indies and wherever it could be ventured on, and the Dutch have been equally busy and successful in Java. Now supplies from these sources are coming regularly to the markets in London and Amsterdam, and the prices got for these East India barks are proportionately higher because they yield a better percentage of quinine, due to the care in cultivation, selection and preparation. We trust this statement is true. It is made without qualification and the market rate is an infallible test for quality in a material of this kind. It has been feared that the quality of bark might suffer under cultivation and by change of conditions, and if this fear can be laid aside it will be fortunate. The English authorities have published full reports of their long and varying series of experiments which finally led to the present success, and their scientific journals regularly report the results of analyses of the last importations.

The field for the production of quinine seems open and not likely to be covered by the enterprises now under way. It is said that some of the enterprising planters in Ceylon have gone ahead so boldly, and are so confident of their future, that they have made calculations for a supply that will soon meet the demand, but careful experts, such as Mr. Howard, the leading English manufacturer of quinine, and the other scientific men with whom he is associated in testing the various barks sent to London, rather discourage any such sanguine hopes, and hold the view that the demand is likely to outstrip their efforts. We trust that the matter may be followed up at the next session of Congress and that our representatives will fully inform themselves of the results which have already been attained here, for these will show the opportunity for more general efforts and the promise of success in them.

A NEW TINNER'S TOOL.—A valuable machine for tanners has been invented by a Bristol, Tenn., gentleman. It is thought that it will supersede the square, circular shears and dies now used, which cost about \$800, and that it can be run with great rapidity by foot power, as well as by steam. The inventor thinks the machine can be furnished, complete, for about \$200. The model is on exhibition at Bristol, and attracts much attention among machinists and mechanics.

MORO ROCK.

One of the prominent landmarks on the southern coast of California is El Moro, a high conical rock not many miles above San Luis Obispo. This curious rock, shown in the engraving, is on Estero bay, which was discovered by Cabrillo as long ago as 1546, and here he obtained wood and water. Behind El Moro are several lagoons or streams, and the high land retreats for some distance, leaving the shore low and sandy. From Moro up the coast or as far as Piedras Blancas the hills set well back from the shore, leaving a tract which is now covered with thrifty farms, dairy ranches, etc., the towns of Cayucos, Cambria and San Simeon being the center of the settlements.

The big Moro rock marks the entrance to Moro bay, which is a sort of lagoon or arm of the sea, immediately behind the protecting rock. Once behind the rock a small vessel is safe from all winds, but the entrance is so difficult that the insurance companies will not underwrite on vessels trading there. The place is really unsafe for sailing vessels, but small light draught schooners trade there. There are several small wharves in the lagoon, and produce is brought from the head of the bay in small sloops down to the steamer or schooner.



MORO ROCK, ON THE SOUTHERN COAST OF CALIFORNIA.

Lumber is carried to this bay, and dairy produce, wool, hogs, etc., are shipped. Shipments from the wharf in this little bay last year were 12,337 sacks of flax seed; 10,944 sacks of wheat; 4,726 sacks of beans; 1,160 hogs. The imports were mainly lumber. It is a good farming country in the vicinity, the land being a sandy loam. Further south along the coast lies the Canada de las Ocas rancho, of 32,430 acres, adjoining on the south of which is the Miga'ito rancho of 22,135 acres, nearly half of which is waste mountain land. It is only a few years ago that this whole region was a pastoral one; but now farms, dairies and little settlements dot the landscape.

CEMENT FOR JOINTS.—When rubber plates and rings are used for making connections between steam and other pipes, leakage of joints may be prevented by using a cement made by dissolving shellac in ammonia. The pulverized gum-shellac is soaked in ten times its weight of strong ammonia, when a slimy mass is obtained, which in three or four weeks will become liquid without the use of hot water. This fastens well both to the rubber and to the metal or wood, and becomes by volatilization of the ammonia, hard and impermeable to either gases or fluids.

OMELET.—A plain omelet was made with four eggs, beaten with a spoon, two tablespoonfuls of milk, one tablespoonful of salt. The pan in which it was cooked was very hot when the mixture was put in, and while cooking the pan was kept in rapid motion.

THE COLOR OF THE SUN.

Prof. S. B. Langley, Director of the Alleghany Observatory, famous in the line of discovery in solar physics, is about starting on an expedition of scientific and popular interest. The main object of this expedition is to determine by actual experiment the amount of heat given by the sun to the earth, and also the true color of the sun, as it would appear to an observer beyond our atmosphere. Numerous questions of importance to meteorology are closely involved in this inquiry, and hence it has a direct practical bearing. A liberal citizen of Pittsburg, Pa., who wishes that his name should not be made public, has defrayed the large cost of the requisite apparatus, and also of the incidental expenses of the expedition. The co-operation and hearty assistance of Gen. Hazen, Chief of the Signal Service Bureau, has been given to the enterprise, and it proceeds under his official direction. To attain its special object the expedition must seek one of the most elevated summits on the continent, in an extremely arid region, these two conditions being essential. These are only to be found combined in the remote localities of Arizona and Southern California, in places far from civilization, and where

the aid of government by the War Department is indispensable both to provide transportation and protection.

One of the objects of the expedition will be to prove by a new class of experiments a curious conclusion which Prof. Langley has already arrived at: to the effect that the sun is not really a white, or yellow, or even a red object, but that sunlight is in reality "deeply, darkly, beautifully blue." We, however, see sunlight only through the delusive medium of an atmosphere. We are in the position of people who have been looking through colored spectacles without knowing it. If we had always looked at the electric light in this way—say through yellow glasses—we should have fully believed it yellow. The proof that we have a blue sun is, however, somewhat conclusive at present, and this expedition is likely to add to the strength of the proof. This is not merely a subject of curious inquiry. If our atmosphere in reality has played the part of yellow glasses, it follows that an enormous proportion of the sun's heat has never been taken into account in those questions of scientific meteorology which have a special bearing on climate, and hence upon agriculture and other practical affairs. Two adjacent stations will be selected, respectively at heights of 3,000 and 14,000 ft. for purposes of comparison, through their very different thicknesses of atmosphere. The personnel of the expedition will include at least six specialists, of whom one will be an officer from the army, three from civil life, and two non-commissioned officers of the Signal Service. The expedition starts July 1st from Pittsburg.