SCIENTIFIC AND SANITARY.

The idea of flower-farming for perfumes seems to be exciting a good deal of interest in New South Wales, as many enquiries on the subject have lately been submitted to the Agricultural Department. There are at present in the colony no means of illustrating the practical operations of this industry, but the *Agricultural Gazette of New South Wales* hopes that this deficiency will soon be supplied by the institution of experimental plots on one or more of the experimental farms. The *Gazette* points out that in scent farms large quantities of waste material from nurseries, gardens, orchards, and ordinary farms might be profitably utilized, while occupation would be found for some who are unfit for hard, manual labour. A Government perfume farm was lately established at Dunolly, in Victoria, and this promises to be remarkably successful.—*Science.*

Dr. J. Hann laid before the Academy of Sciences at Vienna, on May 5, says *Nature*, another of those elaborate investigations for which he is so well known, entitled "Further Researches into the Daily Oscillations of the Barometer." The first section of the work deals with a thorough analysis of the barometric oscillations on mountain summits and in valleys, for different seasons, for which he has calculated the daily harmonic constituents, and given a full description of the phenomena, showing how the amplitude of the single daily oscillation first decreases with increasing altitude, and then increases again with a higher elevation. The epochs of the phases are reversed at about 6,000 feet above sea-level as compared with those on the plains. The minimum on the summits occurs about 6 a.m., and in the valleys between 3 and 4 p.m. The double daily oscillation shows, in relation to its amplitude on the summits, nearly the normal decrease, in proportion to the decreasing pressure, but the epochs of the phases exhibit a retardation on the summits, of as much as one or two hours. In the tropics, however, this retardation is very small. He then endeavours to show that these modifications of the daily barometric range on mountain summits are generally explained by the differences of temperature in the lower strata of air. In connection with this part of the subject, he considers that even the differences in the daily oscillations at Greenwich and Kew are mostly explained by the different attitudes of the two stations and by the fact that Greenwich is on an open hill. In the second section he has computed the harmonic constants for a large number of stations not contained in his former treatise of a similar nature, including some valuable observations supplied by the Brazilian Telegraph Administration, and others at various remote parts of the globe.—*Science.*

The British consul in Hainan, in his last report, says, according to *Nature*, that during the past year he has made two journeys in that island, one to certain prominent hills near Hoihow, known as the "Hummocks," which lie fifteen miles to the west, on the road to Ch'eng-mai, the other a gunboat cruise to Hansui Bay. The people at both these places, and presumably all along the north-west coast, though believing themselves Chinese, speak a language which is not only not Chinese, but has a large percentage of the words exactly similar to Siamese, Shan, Laos, or Muong. The type of the people, too, is decidedly Shan, without the typical Chinese almond eye. At one time (1,000 years ago) the Ai-lau or Nan-chau Empire of the Thai race extended from Yun-nan to the sea, and the modern Muongs of Tonquin, like the Shans of the Kwangsi province, the ancestors of both of which tribes belonged to that empire, probably sent colonies over to Hainan; or the Chinese generals may have sent prisoners of war over. It is certain that some, at least, of the unlettered, but by no means uncivilized, tribes in the central parts of Hainan speak a type of language which is totally different from that spoken by the Shan-speaking tribes of the north-west coast. Yet the Chinese indiscriminately call all the non-Chinese Hainan dialects the Li language. The subject, Mr. Parker says, is one of great interest, well worth the attention of travellers. It was his intention to pursue the enquiry when making a commercial tour of inspection round the island, but his transfer to another post compels him to abandon his scheme.—*Science.*

The latest researches of the Finnish expedition to the Kola Peninsula will modify, as we learn from *Nature*, the position of the line which now represents on our maps the northern limits of tree-vegetation in that part of Northern Europe. The northern limit of coniferous forests follows a sinuous line which crosses the peninsula from the north-west to the south-east. But it now appears that birch penetrates much farther north than the coniferous trees, and that birch forests or groves may be considered as constituting a separate outer zone which fringes the former. The northern limits of birch groves are represented by a very broken line, as they penetrate most of the valleys, almost down to the sea-shore; so that the tundras not only occupy but a narrow space along the sea-coast, but they are also broken by the extensions of birch forests down the valleys. As to the tundras which have been shown of late in the interior of the peninsula, and have been marked on Drude's map in Bergham's atlas, the Finnish explorers remark that the treeless spaces on the Ponoi are not tundras but extensive marshes, the vegetation of which belongs to the forest region. The Arctic or tundra vegetation is thus limited to a narrow and irregular zone along the coast, and to a few elevated points in the interior of the peninsula, like the Khibin tundras, or the Luyavrurt (1,120 metres high). The conifer forests, whose northern limit offers much fewer sinuosities than the northern limit of birch growths, consist of fir and Scotch fir; sometimes the former and sometimes the latter extending up to the northern border of the coniferous zone.

In the structure of his teeth and the organs of digestion, man more closely resembles his nearer relatives of the ape and monkey tribe, who are vegetarians, than he does his more distant relations, the carnivora. Yet there are differences of structure which clearly separate him from the former as well as the latter class, and which justify us in ranking him as omnivorous, and adaptable in his dietetic habits to varying conditions of climatic and social environment. If any argument is needed for further scientific rebuttal of the extreme vegetarian view, it may be found in the universal experience of the race. The further back we go in human history, the nearer we approach, apparently, not a condition of pure vegetarianism, but on the contrary a more general and universal use of animal food. Men were hunters and fishermen before they adopted a pastoral or agricultural life, living almost exclusively upon the products of the chase and the resources of the sea. In the ancient "kitchen middens" of Europe and America, mingled with the shells and bones of fish, we find animal, and sometimes even human, bones, on which the marks of human teeth clearly reveal the uses to which they were put. And if we assume before this stage of human evolution a social or unsocial state, when men lived exclusively on the products of the soil, an assumption which has no warrant in the accessible testimony of archæology or history, we must imagine the condition of man then to have been similar to that of the digger Indian or certain of the hill tribes of Hindustan, who rank among the lowest extant specimens of the human race. Looking at this question from the climatic standpoint, we find in the tropical regions a predominance, but not an exclusive prevalence, of the vegetarian habit, while in the Arctic regions the native races resort almost entirely to the use of animal food. In neither of these regions do we find the human race in its highest perfection. Civilization received its primary impulse and has achieved its most notable successes in the temperate zone, and among races which are neither exclusively vegetarian nor exclusively carnivorous in their habits. The modern American and European, as is well known, is a descendant of one or more branches of the ancient Aryan or Indo European stock. It so happens that one branch of this stock which early separated from its European cousins and travelled southward to people the mountains and plains of India, through stress of climatic and religious influences, became as nearly exclusively vegetarian in its habits as any large section of the human race has ever been, and has remained so for centuries. Here, then, is an opportunity for comparison. The effect of the vegetarian habit, superadded to climatic conditions, has been to develop a race notable indeed for some of its intellectual traits, but inferior in size, lacking in physical stamina and energy of character, whose millions of people easily fell a prey first to the Mohammedan and afterward to the English, whose commercial enterprise for centuries has proved inferior to that of the small competing race of the Parsees—their nearer blood relations—and which has shown itself lacking in those essential traits which characterize our modern, progressive civilization. The great and successful men of all ages have been those who have not departed too widely from the mixed diet which has long constituted the habit of the races which have peopled the temperate regions of the earth.—*Lewis G. James, M. D., in Food for July.*

Beware of Green Fruit.—Now that the heated term is approaching, people should pay particular attention to their diet, above all things avoiding unripe fruit and stale vegetables, which invariably bring on Cramps, Cholera Morbus, or Diarrhœa. Children are particularly subject to complaints of this kind, and no mother can feel safe without having a bottle of Perry Davis' Pain Killer within easy reach. It is a safe, sure, and speedy cure for the disorders named, and no family medicine chest is complete without it. Ask for the Big 25c. bottle.

Some trials with solidified petroleum were made a few weeks ago at the works of the Solidified Petroleum Corporation at Hackney Wick, London, and they demonstrated that a 6 horse power tubular boiler containing eighty gallons of water could be heated by 62 lbs. of the chenhall fuel (or solidified oil), and in 36¼ minutes steam raised to indicate 60 lbs. to the inch, while it took 106 lbs of coal and wood to raise steam to 60 lbs. in one hour's time.—*Scientific American.*

At the meeting of the Field Naturalists' Club of Victoria on March 14, as we learn from *Nature*, Professor Baldwin Spencer, the president, gave an interesting account of a trip he had made to Queensland in search of Ceratodus. Special interest attaches to this form, since it is the Australian representative of a small group of animals (the Dipnoi) which is intermediate between the fishes and the amphibia. Ceratodus has its home in the Mary and Burnett Rivers in Queensland, whilst its ally, Lepidosiren, is found in the Amazon, and another relative, Protopterus, flourishes in the waters of tropical Africa. Although unsuccessful in obtaining the eggs of Ceratodus, owing to the early season, Professor Spencer was able, from a careful study of the surroundings under which the animal lives, to infer that its lung is of as great a service to it during the wet as during the dry season—a theory in direct opposition to the generally accepted one that the lung functions principally during the dry season, when the animal is inhabiting a mud-cocoon within the dry bed of the river.—*Science.*

In a recent number of the Journal of the Straits Branch of the Royal Asiatic Society there is an interesting note on the little insectivora, *Tupaia javanensis*. It is very common in Singapore, and especially in the Botanic Gardens, where it may be often seen running about among the trees. It is easily mistaken for the common little squirrel (*Sciurus hippurus*), of which it has much the appearance. When alarmed it quickly darts up the trunk of the nearest tree, but it is a poor climber, and never seems to go high up, like the squirrel. Besides these points of resemblance, it appears to be largely frugivorous. It was found that the seeds sown in boxes were constantly being dug up and devoured by some animal, and traps baited with pieces of cocoa-nut or banana were set, and a number of tupaias were caught. These being put into a cage appear to live very comfortably upon bananas, pine-apples, rice, and other such things; refusing meat. The Rev. T. G. Wood, in his "Natural History," states that *T. Ferruginea* is said to feed on beetles, but to vary its diet with certain fruits. The common species at Singapore seems to be almost entirely frugivorous, though its teeth are those of a typical insectivora.—*Science.*