the course of a debate on the question whether the Association should join the Union for the Promotion of the Interests of Cinchona-Cultivation, recently established in Amsterdam, a planter who had recently returned from Europe asserted that no good could come from any reduction of the exports. The coalition of the German quinine-makers, he observed, was too powerful to be overcome by the planters. The stock of bark in Europe was sufficient to supply the manufacturers' requirements for two years, and until that was cleared off the growers were powerless. A capital of at least £150,000 would be required to keep a planters' syndicate going, and no such amount could be brought together by the planting interest. The German system of quinine-making was totally different from, and much superior to, that followed by the French and American factories. The Milan quinine-works also used the German system, but an agreement had been made between that factory and the German syndicate, by virtue of which the German makers paid an annual royalty to the Italian factory on condition that it should cease working. The President of the Association pointed out that however anxious all the Java planters might be to improve the price of bark, it was not they, but the directors of the great cinchona-companies, who had their head-quarters in Amsterdam, who could take effective action. Some time ago the Association agreed to restrict the exports of cinchona, but no sooner was this decision taken than a few planters outside the Association commenced to increase their own exports, thus nullifying the Association's object. Unless the whole of the Java plantations, without exception, agreed upon common action nothing could be done. Another point of danger to Java planters lay in the decline of the exchange-value of the rupee. Java has a gold standard, and cannot profit on exchange, but the Ceylon planters now receive about 59 per cent more rupees for every £1 worth of bark sold in Europe than they did in the first years of their cinchona industry. On the other hand wages are the same as they were then, and the Java growers are therefore, at present, seriously handicapped against their Ceylon colleagues.

TEA.—The Assam market has been severely tested this week with heavy sales, and has borne the trial well as regards prices. On Monday the auctions lasted from noon till past 5 o'clock, and showed remarkably steady rates for all grades, and while there and there prices were not quite so stiff on Wednesday, the result of the sales for the week shows that Indians are wanted, and that the recent advance was fully justified. A good trade has been done in the country, and Irish buyers are now getting an assortment of useful broken Pekoes. Ceylon sales are lighter and likely to continue so for a while, and very full prices were realised, Tuesday's sale going off rapidly with plenty of competition. In Congou teas fine Kintucks and Keemuns continue to advance, showing in man cases a rise of from 4d to 6d per lb. from original opening quotations. Capers are steady at recent low rates.

SIX WEEKS IN JAVA.

THE island of Java has been receiving considerable attention in the English press of late: the *Pall Mall Gazette* had an illustrated contribution on this Dutch Dependency not long ago; and in a recent *Blackwood*, Col. Sir H. Collett gives an interesting account of "Six Weeks in Java" from which we quote a few passages. First in reference to travelling:—

The dry season in Java commences in April, and the most favourable time for travelling is from the beginning of that month to about the end of June. July and August are hot, especially in eastern Java where the rainfall is less than in the western provinces, and where drought is apt to prevail during the autumn. In October the rainy season begins.

In a few years Java will possess a railway extending from Batavia on the west to Soerabaja on the east—that is, throughout nearly its entire length. At present the difficulties of construction through a hill country leave a gap of over one hundred miles between Garoet and Tjilatjap on the southern coast. The journey between these points is somewhat difficult, and requires arrangement beforehand; we therefore, found it most convenient, when leaving the western for the central provinces, to return to Batavia and go by sea to Samarang.

The train service in Java is very regular and punctual, and even an unbooked portmanteau appears to be quite safe in the luggage-vans. The carriages are built on the American plan, which ensures good ventilation; and we found the second class sufficiently comfortable. The speed is slow according to European ideas, and the stoppages prolonged and frequent but in Java no one is in a hurry and as the scenery is always interesting, small delays are rather welcome than otherwise.

Then about Gardens, cultivation and vegetation:—

The Buitenzorg Botanical Garden may perhaps somewhat disappoint the expectation of the unscientific mind, as more attention is paid therein to the requirements of botany than to the picturesque. But the garden possesses more named species of plants than any other similar establishment, except perhaps Kew; and its collection of palms, all growing in the open instead of being crowded under a glass roof, is certainly unrivalled. The plant-houses are poor, and not much money is spent on them. The orchids also are in the open, and there is nothing at Buitenzorg to compare with the orchid-house in the Calcutta Gardens, where ferns and foliage plants combine with gorgeous flowers to produce a scene of vegetable beauty that is, I think, unequalled.

A visit should also be paid to the Government experimental plantation, about two miles from the Buitenzorg hotel. The two varieties of coffee (*C. arabica* and *C. liberica*) commonly seen in cultivation, several species of the plants producing gutta-percha, mahogany trees, cardamoms, and numerous other interesting plants possessing economic value, may be seen there.

We left Buitenzorg by railway on the morning of the 3rd May, and arrived at Bandoeng, the capital of the Preanger Regency, the same afternoon. The scenery was always interesting, and sometimes fine, as the train passed along deep ravines dropped with tropical vegetation and seamed with waterfalls. It was interesting to note the dark-green Nipa palms (*N. fruticans*) standing with erect fronds in marshy hollows and to remember that in Tertiary ages the same palm grew in the Thames valley and dropped its fruit into the muddy waters. The sugar palm (*Arenga saccharifera*) one of the most useful of plants is always to be seen growing near villages, with enormous bunches of berries pendent from its lofty stem. This palm produces at the bases of its leaves a black fibre, like horse-hair, which is put to a variety of uses, and may be seen covering the ridges of the native huts all over the island

We saw much rice, coffee, and cinchona cultivation, often separated by hedges of *erythrina*, the "Indian coral-tree."

Taller tree-ferns than we had seen elsewhere, some attaining a height of at least sixty feet. A handsome fern (*Dipteris Horsfieldii*) grows abundantly in shady nooks, and is remarkable from its large deeply-lobed fronds dark-green above and pale coloured below.

There is much cultivated land round Sindanglaja, and it is curious to observe the mechanical scarecrows which the ingenious Malayan mind has evolved. The natives are also fond of keeping birds in cages. Every house has at least two or three; but instead of hanging against a wall the cages are hoisted up high above the roofs on bamboo poles: and thus the little prisoners obtain fresh air and sunshine, and are clear of the mosquitos and other baneful insects that swarm below.

We left Boroboedar at 7 a.m. on 25th May, and arrived in three hours at Djokjokarta, a large town on the line of railway to Soerabaja. Every yard of the country through which we passed was cultivated the principal crops being sugar-cane and manihot. Sugar is the staple export from eastern Java; and the cane-fields, with their waving plumes of silvery-grey inflorescence, form a charming addition to the landscape. In India the cultivated sugar-cane bears no flowers, and the plants are propagated by cuttings, and even in Java the seeds do not mature. Manihot. (*M. utilitissima*) is grown on dry elevated land not suited for rice, and its queershaped tuberous roots are seen in every bazaar. From these the meal known as cassava is prepared in tropical America, and tapioca

for the European market. The manihot is a handsome plant, with large deeply-lobed leaves; but the raw root is bitter, and more or less poisonous until the juices have been expelled by pressure.

As to Dutch life in Java, the following is interesting :—

From Sindanglaja to Buitenzorg is a drive of twenty-four miles through charming scenery and over an excellent road. It takes about four hours. We returned from Buitenzorg to Batavia, and sailed at 9 a.m. on the 17th May in a Dutch coasting steamer for Semarang in Central Java. The steamer was comfortable, but was rather crowded, as in addition to the ordinary passengers we carried twenty Dutch young ladies, on the way to their homes for the holidays. The girls were in high spirits, and kept us amused with playing games and singing chorus songs until the ship became a little lively, when they disappeared below. The Anglo-Indian in Java is much struck by the manner in which the Dutch make themselves at home in their Eastern possessions, as contrasted with our habits in India. Few fathers of families in Java think it necessary to send their boys and girls to Holland for education; and it is common, even in Batavia, to see troops of little pale-faced children creeping unwillingly to school. The Dutch ladies also seem to resign themselves quite willingly to perpetual exile. The difference is no doubt partly due to the superior climate which the interior of Java possesses, as compared with the burning plains of India; but it is also in some degree attributable to the sensible manner in which the Dutch adapt their dress and daily habits to the conditions of life in the tropics. In Java the Europeans seem to make up their minds to live their lives there, while in India we are all birds of passage.

Our "temple-tree" (*Plumiera acutifolia*) seems to be given over to cemeteries in Java, all native burial-places had them and they were the largest trees of the kind, Sir H. Collett had ever seen. A great deal of information is given about the volcanic mountains and craters in Java, also on the Buddhist and Hindu temple remains. One such reference we quote :—

The wonderful temple of Boroboedar is conjectured by Fergusson to have been erected in the seventh century of the Christian era, the golden age of Buddhism in Java, "just when the Buddhist system had attained its greatest development, and just before its fall. This temple thus contains within itself a complete epitome of all we learn from other sources and is a perfect illustration of all we know of Buddhist art and its revival."

The temple is built on the summit of a commanding hill, and has the form of a pyramid with its apex removed. Each side of the base measures 370 feet, and on the upper platform are placed the seventy-two small shrines (or dagobas), each with a seated statue of Buddha in it, which formed the temple proper. In the centre of these rises a larger shrine now empty, but which no doubt once contained relics or a statue. Four gallaries, or procession paths encircle the structure, and lead to the upper platform, where a grand view of the fertile plain enclosed by rugged mountains is obtained.

"It is not, however," Fergusson writes, "either from its dimensions or the beauty of its architectural design that Boroboedar is so remarkable, as for the sculptures that line its galleries. These extend to nearly 5,000 feet, almost an English mile, and as there are sculptures on both faces of the galleries, we have nearly 10,000 feet of bas-reliefs; or if we like to add those which are in two storeys, we have a series of sculptures which, if arranged consecutively in a row would extend over nearly three miles of ground. Most of them are singularly well preserved; for when the Javans were converted to Muhamadanism it was not in anger, and they were not urged to destroy what they had before reverenced: they merely neglected them, and, except for earthquakes these, monuments would now be nearly as perfect as when they were first erected."

The outer face of the basement is extremely rich in architectural ornaments and figure sculptures, but is not historically important. The first enclosed gallery is the most interesting, and contains on its inner wall 120 elaborate bas reliefs portraying scenes in the life of Buddha. In the three upper galleries Buddhism is represented as a religion. Groups of Buddhas, three, five, or nine, are repeated over and over again, mixed with representations of saints and sages. The carvings have been executed in a hard trachytic rock, and if the covering of moss and lichens is scraped off, the finest tracings of the artist's chisel are still to be discerned.

We are accustomed to regard Buddhism as a widely-spread religion even in these days; but the faith is now in its decadence as compared with the golden age which witnessed the nearly contemporaneous erection of temples in Afghanistan, in India, and in Java—countries where the tenets of Sakya Muni have long ceased to hold sway.

INDIAN PATENTS.

Calcutta, the 27th September 1894.

Specifications of the undermentioned inventions have been filed under the provisions of Act V of 1888 :—

Dyeing Fibres.—No. 55 of 1894.—Alexander Beith Hay, Manufacturing Chemist, and James Moffatt Park, Chemist, both of Maryhill, Glasgow, in the Co. of Lanark, Scotland, for improvements in dyeing fibres, yarns and fabrics. (Filed 18th September 1894.)

Machine for Husking, etc.—No. 112 of 1894.—Robert Rickie, of Messrs. Rickie & Co., Bangalore Iron Works, Bangalore City, for an improved machine for husking, decorticating and crushing seeds, grains or berries. (Filed 13th September 1894.)—*Indian Engineer.*

REPORT ON GINGER CROPS IN JAMAICA.

Mr. W. Fawcett, the Director of Public Gardens, has issued his report on the Ginger Crops of Jamaica. He says :—

The quality of commercial ginger upon which the price depends, is due chiefly to soil, but also to curing, to the variety, white or blue and to whether it has been freshly planted a few months before or has been "ratooning" for one or more years.

The soil, which produces the very highest quality realising perhaps £10 per cwt. in the London market is the very deep black soil of virgin forest. To grow ginger under this condition involves the destruction of large areas of forest.

Magnificent trees, six feet in diameter, may be seen in some districts lying rotting on the ground while the ginger cultivators have gone further to the centre of the island, abandoning the woodlands already cut down. The plan adopted in cleaning the forest is for a cultivator to invite 10 or 12 of his friends to a "cutting match," he provides food and drink and the laborious work of feeling trees is carried on merrily and without much expense. Afterwards fire is put, and the place is burnt over. This burning is considered very important as much so as the virgin soil probably its importance is due principally to the deposit of potash and other mineral matters contained in the ashes, but the fire will also sweeten the ground correcting sourness and moreover it destroys insect pests. Some cultivators will only grow ginger in freshly cleared woodland and next year they move on to a new clearing, but although in this way they get very fine ginger it is at the expense of forest land which would require a very heavy outlay and perhaps a term of a hundred years to restore. Albert Town was not so long ago a centre for the cultivation, but I was told there that growers had already got as far as fourteen miles further inland.

Ginger can be and is grown in many places year after year on the same ground. An intelligent cul-