

tar was called heavy oil of tar. This substance contained a singular organic product, first discovered by Dr. Hofmann, and called by him "kynol" or "aniline," which possessed the property of giving, with bleaching powder and other agents, a magnificent blue colour. An interesting fact has been discovered by Mr. James Young of Glasgow—namely, that if coals were distilled at a low temperature the products obtained were different from those which were produced when coals were distilled at a high temperature. One of the most striking differences of results was, that in place of the naphthaline, a valuable lubricating agent called paraffine, a solid substance, and a large quantity of carburetted hydrogens, were also distilled, which, being free from smell, were valuable for commercial purposes, and had received the general name of paraffine oil; or, as Dr. Lyon Playfair remarked, in his report of the Great Exhibition of 1851, it was "liquefied coal gas." This paraffine oil, when mixed with other oils, was now most extensively employed in the cotton mills of Manchester and the neighbourhood. Solid paraffine was also obtained in the distillation of peat, and was employed for manufacturing candles, there being added to it about twenty per cent. of wax. These candles were remarkable for their transparency and the pureness of their flame.

LINNEAN. — Nov. 21st. — Thomas Bell, Esq., President, in the chair. William Freeman Daniell, M.D., and William Gourlie, Esq., were proposed as Fellows. — Dr. Mackay, A.L.S., presented dried specimens of *Banksia prostrata*, *B. undulata*, and a cluster of the fruit of *Sabal Blackburniana*, from the College Botanic Garden, Dublin. Mr. David Moore, A.L.S., presented specimens of the fruits of *Taconia molliana*, *Discuma Herbertiana*, *Solanum ciliatum*, and *Banksia marcescens*, all from the Glasnevin Botanic Garden, Dublin. Dr. W. T. Iliff, F.L.S., exhibited dried specimens of two remarkable shrubby Compositæ (*Baccharis genistelloides*, and a species of *Senecio*), transmitted from Peru to a German house, as valuable pharmaceutical samples. Mr. Brocus exhibited numerous specimens of leaf-skeletons, prepared in such a manner (by allowing portions of the leaf to remain in the original state) as to present delineations of natural objects, portraits, &c. The President announced that Vol. XXI, Pt. 3, of the 'Transactions' of the Society, was now ready for distribution to the Fellows. Read, the conclusion of Mr. Miers' 'Observations on the Structure of the Seed, and peculiar Form of the Embryo in the *Clusiaceæ*.' This paper details the result of an investigation into the structure of the seed of the *Clusiaceæ*. The family is divided by the author into three tribes. 1, the *Clusiæ*, where numerous seeds exist in each cell of the fruit, all fixed horizontally by their bases to the persistent axile column; 2, the *Toromiteæ*; and 3, the *Garcinieæ*, having only a single large seed in each cell, which is always fixed to the axile column by its ventral face. The seed of the *Clusiæ* has three coverings, a scarlet fleshy arillus, completely investing a crustaceous testa, within which is a membranaceous inner integument; the testa is connected at its base by a small hilum to the foot of the arillus, from which point a free vascular cord (the raphe) extends along its ventral face, beneath the arillus, to the summit of the testa, where a distinct hole is seen (the diapyle), through which the raphe penetrates to terminate in the neck of the inner integument, where the latter is marked by a very distinct chalaza. The nucleus is oval, fleshy, and wholly filling the cavity; near its summit it has a small nipple-shaped prominence, while its main body is solid and homogeneous, exhibiting in its axis a terete white portion, which extends from the apical protuberance to a shining speck at the base. Gaertner regarded the main body of this nucleus to be albumen, and the axile portion to be the embryo, all consolidated into one solid mass. Cambasides and all succeeding botanists, considered the seed to be exalbuminous, the apical protuberance to be the superior radicle, and the great body of the nucleus

to be two fleshy cotyledons consolidated together, the line of their junction being indicated by the whitish axile portion. Mr. Miers brings forward evidence to show that there has been a complete misapprehension of this structure, and he demonstrates the fact that the apical protuberance hitherto considered to be the radicle, consists of two minute cotyledons, indicated by a distinct cleft which separates them; that the great body of the nucleus is a gigantic inferior radicle, and that the axile portion is its caulicle, terminated at its apex by a minute plumule, seen in the bottom of the cotyledonary cleft, and at the base by the shining speck there always distinguishable. In the *Toromiteæ* the seed is always much larger, and enveloped in a scarlet fleshy arillus, whose fimbriated margins overlap each other along the dorsal face: the testa is much thinner, with a large ventral hilum, whence the raphe, imbedded in its substance, is spread out into branching nervures: the nucleus is solid and homogeneous, resembling that of the *Clusiæ*, only that the apical protuberance is wanting, and in its place a small hollow is seen. The seed of the *Garcinieæ* differs in no respect from that of the *Toromiteæ*, except that its arillus is entire, very pulpy, and generally sweet and edible. The structure of the nucleus in both tribes has been considered by botanists to consist (as in the *Clusiæ*) of two large fleshy cotyledons, with a very diminutive superior radicle, all conjoined in one solid body. Mr. Miers shows, on the contrary, that these presumed cotyledons are a monstrous inferior radicle. At first sight the cotyledons will be found to be altogether wanting, but on examining attentively a minute point is seen in the bottom of the apical hollow, which under a strong lens will be found to consist of four diminutive imbricated scales, the two outer scales being the cotyledons—the inner ones the plumule. That such is a correct view of its structure is proved by the drawings of Roxburgh and Wight, who give figures of seeds of *Xanthochrysum* and *Garcinia* in a state of germination, where the plumule is seen ascending in a long sprout, with the cotyledons fixed in the middle of the shoot, produced by the extension of the upper portion of the caulicle, while this axile caulicular process, growing at the same time from the basal speck, has extended itself into a long root. These facts, in the opinion of the author, are conclusive in regard to the truth of his views, and he proceeds to show that the seminal envelopes are really of the nature he describes, because Dr. Asa Gray contends that in *magnolia* (a structure quite analogous to that of *Clusia*), that the scarlet fleshy envelope hitherto always considered to be an arillus, is the testa, and that the hard crustaceous coating hitherto regarded as the testa, is the tegmen or inner integument of the seed; but Mr. Miers shows, from the observations he made in Brazil, that Dr. Gray has overlooked the existence of a third or innermost integument, the true tegmen with its apical chalaza, and also of a free raphe running outside the crustaceous shell, and inside the external envelope, from the base to the summit, where it passes through the diapyle to lose itself in the chalaza of the inner integument, thus proving beyond doubt that the outer coat is arillus, the crustaceous shell is testa, and that the inner membrane is the true tegmen. He enters into many considerations on the nature and origin of the arillus, and in proof of the generally received opinion that it is of extraneous production over the original coats of the ovule, he adduces the fact shown by Cambasides that in the seed of *Coccoloba* the development of the arillus sometimes takes place when the ovule is abortive, demonstrating that where the latter had ceased to grow the former attained its full development, arising from an extraneous expansion of the funicular or placental point of attachment of the ovule. The author concludes that the many facts adduced in this memoir tend to bring the family of the *Clusiaceæ* into close proximity with the *Rhizophoræ*; for if we conceive the caulicular extension which separates the cotyledons from the great body of the nucleus in *Caryocar* to be suppressed, we have the exact

form of the embryo in the *Clusiaceæ*. They tend also to bring this family into closer relation with the *Hypericaceæ* and *Maregraviaceæ*, and to remove them from *Ternstroemiaceæ*, with which they have hitherto been considered to be most intimately allied. The author stated that he was at present engaged in the investigation of the whole order, with the view of indicating the affinities, and defining the structure and generic distribution of a family, the characters of which have been hitherto very imperfectly understood.

ROYAL INSTITUTION.—General Monthly Meeting. — Dec. 4th.—W. R. Grove, Esq., Q.C., F.R.S. Vice-President, in the chair. The Earl of Rosse, Benedict Laurence Chapman, Esq., and Henry Pemberton, Esq., were elected Members of the Royal Institution. The Secretary reported that the following arrangements had been made for the Lectures before Easter, 1855:—Six Lectures 'On the Chemistry of Combustion,' (adapted for a juvenile auditory), by Michael Faraday, Esq., D.C.L., F.R.S., and Fullerton Professor of Chemistry, R.I. (commencing on Dec. 28th, 1854.) Eleven Lectures 'On Magnetism and Electricity,' by John Tyndall, Esq., Ph.D., F.R.S., Professor of Natural Philosophy in the Royal Institution (commencing in January, 1855.) Eleven Lectures 'On the Principles of Chemistry,' by John Hall Gladstone, Ph.D., F.R.S., (commencing in January, 1855.) Eleven Lectures 'On English Literature,' by W. B. Donne, Esq. (commencing in January, 1855.)

MEETINGS FOR THE ENSUING WEEK.

- Monday.—Statistical, 8 p.m.—(On the Statistical Position of Religious Bodies in England and Wales, by Mr. Horace Mann.)
- Royal Academy, 8 p.m.—(Professor Partridge on Painting.)
- Tuesday.—Linnean, 8 p.m.
- Civil Engineers, 8 p.m.—(Annual General Meeting; Ballot for Council.)
- Pathological, 8 p.m.
- Wednesday.—Society of Arts, 8 p.m.—(Mr. Alfred Smees, F.R.S., on the New Process of Printing Blank-Notes by Surface-Printing from Electrotypes.)
- Thursday.—Royal, 8½ p.m.
- Antiquaries, 8 p.m.
- Numismatic, 7 p.m.

FOREIGN CORRESPONDENCE.

Singapore, 26th September. In July last I left this town for Malacca, and spent more than two months there.

Few places have populations so varied and distinct living together as are to be found in Malacca. The ubiquitous Chinese are perhaps the most numerous, keeping up their manners, customs, and language; the indigenous Malays are next in point of numbers, and their language is the 'Lingua franca' of the place. Next come the descendants of the Portuguese—a mixed, degraded, and degenerate race, but who still keep up the use of their mother tongue, though ruefully mutilated in grammar; and then there are the English rulers, and the descendants of the Dutch, who all speak English. The Portuguese spoken at Malacca is a useful philological phenomenon. The verbs have mostly lost their inflections, and one form does for all moods, tenses, numbers, and persons. *Ea vai, nos vai*, does for everything connected with going. Adjectives too have been deprived of their feminine and plural terminations, so that the language is reduced to a marvellous simplicity, and with the admixture of a few Malay words becomes rather puzzling to one who has heard only the pure Lusitanian.

In costume these several peoples are as varied as in their speech. The English preserve the tight fitting coat, waistcoat, and trowsers, and the abominable hat and cravat; the Portuguese patronise a light jacket, or more frequently shirt and trowsers only; the Malays wear their national jacket and sarong, with loose drawers; while the Chinese never depart in the least from their national dress, which, indeed, it is impossible to improve for a tropical climate, whether as regards

comfort or appearance. The loosely hanging trousers, and neat white half-shirt-half-jacket, is exactly what a dress should be in this latitude.

The town of Malacca is crowded along the side of the little river, and consists of narrow streets of small houses, some devoted to shops, others to the more fancifully ornamented dwellings of the Chinese. In the suburbs are the houses of the English, and other more civilized inhabitants, embedded in groves of cocoa nut, mangosteen, durian, rambutan, jack, mango, araca-nut, and many other fruit trees, the never failing shade of whose varied and beautiful foliage is as agreeable as the fruits themselves, the merits of which I cannot but think have been far too highly rated. Some small hills near the town are entirely occupied as Chinese graveyards, many acres of ground being covered with large horseshoe-shaped tombs of solid masonry, generally much and fantastically adorned with painting, gilding, and carving. Further in the interior are extensive marshy flats cultivated as paddy-fields, out of which low isolated hills rise like islands. Further on, again, these flats contract into narrow valleys, winding about amidst low undulations. It is along the sides of these that the Malay villages are situated, only distinguishable by the dense masses of palms and fruit trees in which their houses are buried. Every spot of ground which is not nor has been cultivated is covered with jungle.

In Malacca, as in Singapore, the Chinese do everything. They build houses, they fetch wood and water, they cultivate vegetables, they clear the paddy by laboriously pounding it in a huge mortar, the stamper of which is worked by the feet, they work the tin mines of the interior, and the gold mines of Mount Ophir. They do everything but manage horses. A Chinese groom is an impossibility.

My first excursion was to a place called Gading, thirteen miles from the town, where I had permission to reside in a house occupied by some Chinese Christians who are cultivating a gambir and pepper plantation. The house was a mere huge shed. I lived in it a fortnight, as, strange to relate, the Chinese (I trust because they were Christians) kept it clean. No people in the tropics really cultivate the soil as these do. They do not merely plant and reap. They dig, and trench, and level; they eradicate weeds and stumps; they keep the ground clean, and they manure; the process of manuring, indeed, was the only thing I objected to, as the tank was a large bucket kept standing for convenience in a corner of the house. The rage for liquid manure is such, that in the Chinese villages a bucket often stands near the door for public use. The pigs for the same reason are far better lodged than with us, having a floor of poles with a tank beneath, in which all the manure is collected.

I found the men very quiet and civil, doing anything I required with great willingness. Their food consisted of rice, a little fish, and a few vegetables, with weak tea *ad libitum*. They, however, eat a great deal, and four times a day. The Malays, on the contrary, take only two meals.

There were several tin mines in the village near us, employing many thousand Chinese. The ore is obtained from beds of a quartzose sand in the flat valley before mentioned. It exists in small black grains (an oxide?), and is separated by washing. This is done generally by hand, in large wooden basins, or sometimes by a stream of water in a large wooden trough. The smelting is done with charcoal, in rude clay furnaces, bound together with poles and rattan; the metal runs into a hole at the bottom, and is ladled into a mould, forming an ingot of about 50lbs. weight, and very pure.

After a fortnight's residence one of my Portuguese servants was seized with fever, and I was obliged to return with him to Malacca, where the other was also taken ill, and then I caught the fever. I recovered by a liberal use of quinine, and went to another locality among the Malays, about whom, and of my visit to Mount Ophir, I will write in my next.

A. R. W.

#### VARIETIES.

*The 'Vestiges of Creation.'*—"Mr. Page presents his respectful compliments to the Editor of the 'Literary Gazette,' and solicits insertion, in his first publication, of the enclosed statement relative to the authorship of the 'Vestiges of Creation,' from the 'Dundee Advertiser.' "The following statement made by Mr. Page, at the close of his lecture on Wednesday evening, should, we think, set for ever at rest all rumours and reports relative to the authorship of the 'Vestiges.' In returning the thanks of the meeting to Mr. Page for his lectures, Mr. P. Anderson, the chairman, made allusion to the rumour, pretty widely circulated, that the lecturer was, in some way or other, connected with the authorship of the 'Vestiges of Creation,'—remarking that those who had had the pleasure of listening to Mr. Page's interesting and instructive descriptions, must at once perceive that there was nothing in them at all favouring the views taken by the author of the 'Vestiges;' but on the contrary, that the conclusions arrived at had a very different, and, as they must all have felt, a much more philosophical and satisfactory tendency.

"In noticing this allusion of the chairman, Mr. Page begged to state most emphatically, and without a shadow of reservation, that he was not at all, or in any way, responsible for the facts or opinions of the work in question. At the time the 'Vestiges' was published, he was engaged as one of the literary and scientific collaborators of the Messrs. Chambers; and it so happened that it was in circulation for several weeks before he had seen or read a line of it. The first time he saw it was in the hands of Mr. William Chambers, who came into his room one day with the remark, 'Here was a curious work making some sensation,' and requesting that he (Mr. Page) would write a notice of it for the 'Journal' ('Chambers' Edinburgh Journal.') For this purpose Mr. P. took the work home, and he had not read twenty pages of it when he felt convinced that it was the production of Mr. Robert Chambers; and every additional line he read only tended to establish that conviction. Some days after, when asked for the review, he stated he could not prepare one for two reasons,—1st, that he did not think the work suited for notice in the Edinburgh Journal; and, 2nd, because he believed it to be the production of Mr. Robert Chambers. Mr. William Chambers received this announcement with apparent surprise, but denied all knowledge of the matter, and here the subject dropped. Some time after, however, and when the work was being severely handled by the reviewers, Mr. Robert Chambers alluded to the matter, affecting ignorance and innocence of the authorship, upon which Mr. Page remarked that all he could say was, that had he seen the sheets before going to press, he perhaps could have prevented some of the blunders on which the reviewers were founding so much of their opposition and argument. The consequence of this remark apparently was, that some time after Mr. Robert Chambers sent him the proof sheets of the second or third edition of the 'Vestiges,' with the request that he would enter on the margin any corrections or suggestions that occurred. This he did: and since then he had not seen or read a word of the many editions through which the work had passed, unless the preface to the last illustrated edition, the tone and spirit of which he would not venture to characterise as he felt they ought to be characterised and condemned. In reading the proof-sheets alluded to, he (Mr. Page) had done no more than what many men were in the habit of doing for others, and what he had himself more recently done for Dr. Anderson's 'Course of Creation'—a work avowedly written to counteract the erroneous statements and injurious tendency of the 'Vestiges.' Such was the statement he had to make; and he had only further to remark, that had the moral courage of the author been equal to his ability, or equal to the assiduity with which he had endeavoured to promulgate his doctrines, he (Mr. Page) would have been spared this somewhat painful and unpleasant explanation. He, himself,

had never written a line which he thought shame to avow, or entertained a sentiment which he was afraid to utter; and it would have prevented much annoyance and injury to others had the author of the 'Vestiges' proceeded upon the same maxim. He had now, so far as he was concerned, made a clean breast of it; and if merit was attachable to the work, the author would reap his high reward—if demerit, the blame would, at least, fall on the right shoulders.

"Gilmere-place, Edinburgh, 28th Nov. 1854."

*Initial Honours.*—"People have a sort of natural proneness to imitate Dr. Pangloss, and, like him, to exceedingly rejoice in the possession of literary and scientific appendages to their names. It is not my purpose to question or to criticise this feeling, for surely it is fair and perhaps laudable enough for those who have acquired such distinctions by merit, or even by purchase merely, to wear them in any way they think proper. I would, however, recall your attention to the fact (which I perceive has been before pointed out to you, by a correspondent a few weeks ago) that numerous persons who have no title whatever to claim fellowship with the learned societies, are nevertheless daily in the habit of advertising their names in various ways, either with the initials F.S.A. appended thereto, or some other alphabetical combinations representing other societies. One evil resulting from this state of things has just been exemplified to me in so practical a manner, that I venture to revive the subject with your permission in your columns, hoping that some course may suggest itself whereby societies prejudiced by such proceedings may be enabled to 'put down' all future pretenders. A prospectus has been placed before me by a friend, with the inquiry whether a person whose name appears therein, with the initials of the Society of Antiquaries strikingly annexed, was really a Fellow of so time-honoured and respectable a body. The inquiry and doubt at the same time expressed was very natural, for the name was that of an individual whom we both knew to be 'indifferently honest,' and not a very desirable Fellow of any society. *Ex uno disce omnes* seemed to suggest itself to my friend's mind, and for the time I felt humiliated in having so disreputable an associate, and resolved to suppress any future admission to my friends of my title to the use of the cabalistic initials F.S.A. It was, however, a relief to my mind subsequently to learn from our Secretary that the individual in question is *not* a Fellow of the Society.

I could multiply instances to show the indirect injuries inflicted on the learned societies by the unprincipled conduct of such unworthy pretenders, but the trespass upon your time and space warns me that the above must, for the present, suffice.

J. W. B.

December 12th, 1854.

*American view of Education in England.*—"The popular opinion of education in England is very much in error. We have all of us been too apt to take for granted the statements that have been put forth as to her gross deficiencies in educational means. Not that she is anything like perfect in her system of national education; or that it is adequate to the increasing necessities of her teeming population; but, when we look closely into it, we find that she has educational resources to an extent which she has never had full credit for, and that there are public provisions for still greater educational efforts, to a degree and of a variety of which a stranger has little conception. Properly speaking, there is no national system at all in operation in England; but yet her schools of all kinds are almost as numerous, and many of them quite so efficient, as though there were; and the public money, as well as the private bounty, is abundantly supplied for this important purpose in all its ramifications.—*Norton's Literary Gazette.*

TO CORRESPONDENTS.

F. S. A. has been received. R. D. in our next.