

that this was, as generally imagined, the work of a shrike.—A paper, by Mr. S. S. Saunders, descriptive of some new aculeate Hymenoptera, from Epirus, was read.

CHEMICAL.—R. Porrett, Esq., in the chair.—Read: 1, 'On Chlorophosphuret of Nitrogen, and its Products of Decomposition,' by J. H. Gladstone, Ph. D.—2, 'On the Action of Chloride of Cyanogen on Toluidine,' by Mr. W. Wilson.—3, 'On the Identity of Bisulphamylic and Hyposulphamylic Acids,' by Mr. Joseph Danson.

ROYAL INSTITUTION.—W. Pole, Esq. V.P. in the chair.—'On Successive Forests of Erect Fossil Trees in the Coal Strata of North America and Europe,' by Sir C. Lyell.—The purest coal often exhibits impressions of plants agreeing in species with those found in a more perfect state in strata of shale accompanying coal. The vegetable origin of this fuel is still more unequivocally shown by its internal structure when seen under the microscope, consisting, as it does, of woody fibre, dotted and scalariform vessels, and cellular tissue. This structure is observable not only in bituminous coal but even in anthracite, where the change from the original wood has been carried farthest. The various plants which by their decomposition have produced coal, were not drifted into their present position, but grew in almost every case on the spots where the coal is now found. This is proved by the position of erect trees the lower portions of which rest on seams of coal, and by the abundance of stumps and roots occurring, both in North America and in Europe, in the under-clays, or floors of coal seams. The name of *Stigmara* has been given to the most abundant of these roots; which were first shown by Mr. Binney, of Manchester, to belong to fossil trees called *Sigillaria*,—a conclusion previously thrown out as a conjecture on botanical grounds by M. Adolphe Brongniart. Mr. Richard Brown has in like manner detected at Sydney, in Cape Breton, *Stigmara* roots attached to the base of the trunks of *Sigillaria*. In such cases the roots with their slender rootlets are seen to penetrate in all directions the under-clays which were evidently the original soil in which the trees grew. Each bed, therefore, of *Stigmara* is the monument of an ancient forest. Mr. Logan pointed out in 1840 that such root-bearing clays underlie every coal seam in South Wales, and the same holds true very generally in North America. Sir C. Lyell described, in 1842, ten forests of super-imposed fossil trees at right angles to the planes of stratification on the shores of the Bay of Fundy, in Nova Scotia; and recently, Mr. Richard Brown has found in a single coast section in Cape Breton forty-one under-clays with roots, and eighteen tiers of upright trees of the genera *Sigillaria*, *Lepidodendron* and *Calamite*. These remains of fifty-nine submerged forests extend through a thickness of 1,600 feet of strata. Their entombment implies the repeated subsidence of land, such as took place during the earthquake of 1811-12, when part of the alluvial plain of the Mississippi, called "the Sunk Country," near New Madrid, ninety miles long by thirty in breadth, was submerged. Thousands of dead trees are still standing there, under water, while a still greater number lie prostrate. The manner in which the interlaced roots of the deciduous cypress are fixed in blue clay at the bottom of every large swamp in the delta of the Mississippi affords some analogy to the old carboniferous under-clays; and to explain the non-admixture of earthy matter in coal Sir C. Lyell refers to the exclusion from the central parts of these cypress-swamps in Louisiana of the turbid waters of the Mississippi. The margin of every morass supports a dense growth of reeds, canes, and brushwood, through which the fluvial waters must flow very slowly, parting with all their sedimentary matter before they reach the interior of the vast timber-covered swamp. Recent artesian borings, 400 feet deep, have shown, in the deltas of both the Po and the Ganges, that the subsidences of ancient terrestrial surfaces, once supporting turf or a forest, have sunk far below the level of the sea. The number and richness, however, of the seams of coal stored up in the carboniferous strata doubtless indicate a peculiarity of climate and vegetation more favourable than any which now exists for the accumulation of vegetable matter. As to the climate of the coal-period, the evidence of palms having flourished at

that time—which was once supposed to imply a tropical heat—is now questioned by able botanists; and as tree-ferns abound in New Zealand, the caulopteris of the coal may not have required a high temperature. The absence of coal in winter may have caused the extension of certain tropical forms in the coal period far into high latitudes; and the absence of great heat in summer may have checked the decomposition of plants, till continuous masses of them were buried under sediment thrown down upon them when the land was submerged. The length of time during which dead trees continue to stand erect in submerged areas in the plains of the Mississippi, shows that the envelopment of upright carboniferous stems in shale and sand may have taken place very gradually.

MEETINGS FOR THE ENSUING WEEK.

MON.	Geographical, half-past 8.—'On the Kabbabeesh Arabs,' by Mansfield Parkyns, Esq.—'On Eastern Africa,' by Mr. Macqueen.—'Notices on the Northern Frontier of Nepal.'
TUES.	British Architects, 8.
WED.	Zoological, 9.—Scientific Business.
THURS.	Microscopical, 8.
FRI.	Ethnological, 8.
SAT.	Literary Fund, 3.
	Royal, half-past 8.
	Antiquaries, 8.
	Royal Society of Literature, 4.
	Astronomical, 8.
	Philological, 8.
	Asiatic, 2.

FINE ARTS

ROYAL ACADEMY.

To conclude our notice of this year's Exhibition, there remain a few pictures worthy of attention. In the class of *genre* there are Mr. J. Philips's *Baptism in Scotland* (No. 541), abounding in character and truthful in effect,—and Mr. Solomon's *Too Truthful* (524), expressive of the caprices to which the painter of portraiture is subject. It is picturesque in combination. Mr. F. Tayler's *Keeper's Daughter* (82) and his *Scotch Fern Gatherer* (122) are good examples of the artist. Mr. A. Rankley's *Sunday School* (144) and *Contentment* (597), although of moderate success, may, from the repetition of this class of subject *ad nauseam*, subject their author to the imputation of want of variety. Mr. T. Brooks's *Pastor's Visit* (410) comes under the same category.—For a resemblance bearing closely on the works of Schalken, Mr. P. Van Schendel's *Une Mère auprès de son Enfant, avec Effet de Lumière* (329) may be noticed. This is one of the class of modern Belgian pictures in which close imitation of a type is ever observable. The *Hay-field* (430) is another favourable exemplification of Mr. A. Johnston's powers in the Scottish pastoral. *Bowlers* (452) is one of Mr. G. Harvey's delineations of Scottish pastimes. The *Vacant Chair* (458) is a capital little interior by Mr. James Bridges. *Yorick* mounted on his sorry nag (468) is the work of an improving young artist, Mr. G. Landseer. There is much merit in Mr. T. F. Marshall's *Arrival of the Coach—a Road-side Inn a Century ago* (634),—a subject rendered of additional interest in these days of rapid locomotion.—Mr. Horsley's *Hospitality* (221) is also a work of great talent. Of still life there are a few very remarkable instances. A magnificent combination of *Flowers and Fruit* (586) by T. Groenland, and another by the same hand of *Fruit and Flowers* (1254), are each remarkable for excellent arrangement, truth, beautiful colour, and elegance of execution. Nor will Mr. George Lance less satisfy in his pictures of *Fruit* (148) and *Modern Fruit—Medieval Art* (375); the last an excellent composition of the works of nature and of art.—We must not overlook the *Result of an Antwerp Marketing* (495), a vigorously executed and truthful performance by Mrs. E. M. Ward.

In the class of the poetic and romantic there remains to be named, Mr. H. O'Neil's *Esther* (1255), good as a composition, though not rich in the suggestion of Oriental climate. Mr. Dobson's *St. Cecilia* (44), his *Virgin and Child* (244), and his *St. John the Evangelist* (377) are all graceful and feeble recollections of ancient art and of Eastlake.—A *Nymph* by Mr. Brocky (133) is among the best studies of the nude form in the collection.—Mr. W. D. Kennedy's *Allegro* (438), while possessing much graceful suggestion of pose and colour, is wanting in truthfulness of parts, and the land-

scape portions are not heightened in their value by an execution that defies botanical specification.—*Alfred giving a Portion of his Last Loaf to the Pilgrim* (451), by Mr. W. C. Thomas, is remarkable for a good masculine and modern German style.—*Titania* (461), by Mr. H. Pickersgill, for a graceful and poetical conception and a good effect. *The Temptation in the Wilderness* (48), by Mr. J. T. Linnell, demonstrates the studies of a young painter brought to bear on an elevated theme with an amount of success that will make his future works an object of attention. A scene from Molière's *Tartuffe* (496) is an evidence of the powers of Mr. W. Egley, Junior, in comic transcription:—and *Martha Reproved* (505) shows how Mr. LeJeune can deal with Scriptural presentment.—*Venus and Adonis* (507), by Mr. S. Gambardella, proves the decline in the modern Italian school.—We must not overlook Mr. A. Colin's *Columbus before the Council of Salamanca* (537), a picture full of character and expression. There is marked improvement in the *Beatrice Cenci* of Mr. W. Maddox (565), a painful subject—well rendered. An oft-told story, Mary Queen of Scots compelled to sign her *Abdication* (569), has given occasion to Mr. Severn for the production of a forcible composition in which the figure of Lindsay is enunciated with the required severity. Mr. R. Hannah in *Lady Northumberland and Lady Percy dissuading the Earl from joining the Wars against Henry the Fourth* (572) has changed his ground from the domestic to the dramatic.—In the accessory portions of this work the artist's principal success resides. There are much delicacy and beauty in Mr. M'Innes's *Fiori del Carnevale* (582)—excellent feeling, good grouping and character in Mr. T. A. Woolnoth's *Meeting of Henrietta Maria, Wife of Charles the First, with her Mother, Marie de Medicis* (593), many portions of which would bear completion. Mr. J. J. Gilbert exhibits with enlarged resource and improved success in the scene from 'As you Like It'—*Touchstone and the Shepherd in the Forest of Arden* (594). There are excellent drawing and painting in Mr. A. C. Hayter's *View from the Portico of the National Gallery, looking towards the Nelson Column* (1237).

The landscape department again displays the evil, increased in extent, of that system which on former occasions we have lamented: the same manufacture, inspired by imitation of the works of the popular artists of the day, or by the Art-Union distribution. That the evil progresses is clear:—not, as we have before observed, confined to the individual artists, but seen in whole families of them. Satiety will bring with it the healthy reaction, and an over-stocked market will invite to novelty of view. Of the landscapes which are most conspicuous in talent may be noticed Mr. J. Stark's *Marlborough Forest* (10) and *Windsor* (447),—Mr. J. J. Chalon's *Hollow Road through a Wood* (43), one of the best examples of his art, vieing in its tone with the best Dutch masters,—Mr. P. Williams's *Italian Cottage Door* (55) and *Scene in the Campagna, Rome,—looking towards the Alban Mountains* (203),—Mr. G. Stanfield's *Old Bridge, Frankfort* (57), a very bright and truthful work, exceeding even in merit his other picture of *The Cliffs near Boulogne* (398),—Mr. A. W. Williams's *Approach of a Storm* (124),—Mr. S. B. Percy's *Willow Shade* (201),—Mr. C. Branwhite's *Winter Sunset* (246),—Mr. G. Hering's view of *The Ruins of Rome from the Garden of the Palace of the Caesars* (303), prominently marking out the Coliseum, and another view by the same hand from the Boboli Gardens at Florence (397).—Nor is there wanting merit in *Lake Scenery, Savoy; Early Morning—Waiting for the Ferry* (401), by Mr. J. P. Pettitt, obviously the work of a young hand, with whom better acquaintance is desired.—Mr. Martin appears in the old place to which he seems to have established a prescriptive right. His picture, *The Last Man* (441), is as isolated in view as eccentric in practice.—There are great truth and excellent effect in Mr. J. Middleton's *Clearing the Wood—Early Spring* (499); excellent painting in Mr. J. Uwins's *Fortress of Bard, in the Val d'Aosta, Piedmont* (109); and merit in Mr. L. B. Constable's, *Stormy Day* (516).—*Beach Trees—Study from Nature* (529),