

other observatories are also inserted in the tables. Thus this and all preceding publications make available all the radial velocity results obtained at Mount Hamilton and Santiago up to date, excepting suspected variables and stars the spectra of which contain lines not sufficiently serviceable for measurement. The published lists include, therefore, all stars as bright as the 5.00 visual magnitude in the Revised Harvard Photometry, *Annals* 50, and, in addition, many hundreds of stars fainter than magnitude 5.00.

STELLAR PARALLAXES.—Prof. Frederick Slocum, in conjunction with Prof. S. A. Mitchell, of Columbia University, publishes in the July number of *The Astrophysical Journal* (vol. xxxviii., No. 1) the results of some stellar parallax determinations from photographs made with the 40-in. refractor of the Yerkes Observatory. The apparatus and methods used were similar in general to those previously described by Prof. Schlesinger, so the communication, to which reference is here made, is limited to the actual results of the investigation. The following table sums up in brief the values determined:—

Star	R.A. (1900) h. m.	Dec. (1900) °	Mag. and spectrum	Relative parallax	Probable error
♄ Andromedæ ...	1 4	+46 43	4.7 B <sub>8</sub>	+0.004	±0.008
48 Cassiopeiæ ...	1 54	+70 25	4.6 A <sub>2</sub>	-0.002	0.016
20 Persei ...	2 47	+37 56	5.7 F	-0.012	0.007
9 Camelopardalis ...	4 44	+66 10	4.4 B	-0.032	0.011
♃ Orionis ...	5 57	+9 39	4.2 A <sub>2</sub>	+0.036	0.016
Grönings VII., No. 20.	16 21	+48 35	10.7	+0.125	0.012
Anonymous ...	17 33	+18 37	0.1	+0.108	0.011
BD 18°3423° ...	17 34	+18 37	0.0	+0.003	0.004
BD 18°3424° ...	17 34	+18 37	0.2	+0.003	0.008
16 Herculis ...	17 53	+20 50	5.5 B	-0.004	0.008
17 Lyræ C ...	19 4	+32 21	11.3	+0.124	0.008
P Cygni ...	20 14	+37 43	4.9 B <sub>4</sub> P	-0.021	0.016
7 Cygni ...	21 10	+37 37	3.8 F	+0.006	0.016
Nova Lacertæ ...	22 32	+52 12	8 to 13 P	+0.007	±0.012

THE BIRMINGHAM MEETING OF THE BRITISH ASSOCIATION.

WE understand that the argument of the presidential address to be delivered by Sir Oliver Lodge at the Birmingham meeting is as follows:—A marked feature of the present scientific era is the discovery of, and interest in, various kinds of atomism, so that continuity seems in danger of being lost sight of. Another tendency is toward comprehensive negative generalisations from a limited point of view. Another is to take refuge in rather vague forms of statement, and to shrink from closer examination of the puzzling and the obscure. Another is to deny the existence of anything which makes no appeal to organs of sense, and no ready response to laboratory experiment.

In his address the president will contend against these tendencies. He will urge a belief in ultimate continuity as essential to science; he regards scientific concentration as an inadequate basis for philosophic generalisation; he believes that obscure phenomena may be expressed simply if properly faced; and he will point out that the non-appearance of anything perfectly uniform and omnipresent is only what should be expected, and is no argument against its real substantial existence.

Since we gave, in NATURE of July 17, summaries of the provisional programmes of most of the sections of the British Association, for the meeting to be held in Birmingham on September 10-17, notes on the forthcoming proceedings of the Engineering Section have reached us. A varied programme of engineering activity will be presented at the meetings of this section, under the presidency of Prof. Kapp, who will deal with electric traction in his opening address. A group of connected papers on the various influences which affect the propagation of electro-

magnetic waves will be read by Profs. Howe and Marchant and Dr. Eccles. Heat tests of electrical machines will be discussed by Mr. W. R. Cooper, and a practical demonstration of the varied uses of electric cooking appliances will no doubt prove of interest to the members of all sections.

Mechanical engineering claims a large share of the attention of the members, and will include an important paper by Mr. Lanchester, on the application of the internal-combustion engine to railway locomotion, in which he will describe his very successful work in this branch of engineering. Prof. Burstall will discuss the much-debated subject of solid, liquid, and gaseous fuels, and the committee on gaseous explosions will probably present a report on the temperature distribution in the cylinders of internal-combustion engines. A novel hydraulic weighing machine will also be described by Dr. Hele-Shaw, and a new process of bank-note engraving by Mr. Bawtree.

Considerable interest attaches to the report of the new committee for investigating the stress distribution in engineering materials, which will be discussed with the Mathematical and Physical Sections, and connected with this subject Prof. Coker will describe some optical determinations of stress in chain links and in thick cylinders under fluid pressure, Mr. Reid will discuss the flow of plastic solids, Prof. Dixon will deal with impact tests, and Mr. Robertson with the strength of free-ended columns.

Civil engineering is represented by a group of interesting papers, including one by Dr. Cornish on land-slides, accompanied by upheaval in the Culebra cutting of the Panama Canal, while Dr. J. S. Owens and Mr. E. R. Matthews will discuss the movements of sand and shingle in connection with marine engineering work.

A paper of great local interest, by Messrs. Gleadow and Shackle, will describe the fine new station of the Great Western Railway at Snow Hill, while the subject of metals for structures will be discussed by Mr. Walmisley.

The programme of the meeting of Section G is therefore not only of unusual interest, but many of the papers to be read are of considerable importance in relation to industries for which Birmingham is famous.

BONAPARTE RESEARCH FUND GRANTS.

THE committee of the Paris Academy of Sciences appointed to consider the distribution of the Bonaparte Research Fund has made the following recommendations for the year 1913:—H. Caillol, 3000 francs, for the completion of his work entitled "Catalogue des coléoptères de Provence"; A. Colson, 2000 francs, to enable him to continue his experimental work in physical chemistry; E. Coquidé, 2000 francs, to assist him in carrying out his study of the turf lands of the north of France from the agricultural point of view; C. Schlegel, 2000 francs, to enable him to continue his researches on Crustacean development; Jules Welsch, 2000 francs to assist him in his geological exploration of the coast lines of France and Great Britain, and to extend them to Belgium and Scandinavia; MM. Pitard and Pallary, 6000 francs, equally divided, for their scientific expedition in Morocco, organised by the Société de Géographie; Louis Roule, 2000 francs, for the continuation and extension of his researches on the morphology and biology of the salmon in France; M. Pougnet, 2000 francs, to enable him to continue his researches on the chemical and biological effects of the ultra-violet rays, and for the construction of a quartz apparatus to be used for studying the action of ultra-violet light

upon gaseous bodies; M. Dauzère, 2000 francs, for his work on the cellular vortices of Bénard; M. Gard, 2000 francs, for the publication of a work and atlas dealing with the material left by the late M. Bornet; M. Chevalier, 4000 francs, to meet the expenses necessitated by the classification of the botanical material collected in the course of his travels in western and equatorial Africa, and the publication of memoirs on the flora of these regions; Paul Becquerel, 2000 francs, for the continuation of his physiological researches relating to the influence of radio-active substances on the nutrition, reproduction, and variation of some plant species; Le Morvan, 4000 francs, for the completion of his photographic atlas of the moon; M. Pellegrin, 2000 francs, to aid him in the pursuit of his researches, and to publish his work on African fishes, more particularly those of the French colonies; M. Rengade, 3000 francs, for his proposed systematic examination of mineral waters for the presence and distribution of the rare alkaline metals; M. Alluaud, 3000 francs, for facilitating the study and publication of documents collected by M. Jeannel and himself on the alpine flora and fauna of the high mountainous regions of eastern Africa; M. Lormand, 2000 francs, for the purchase of a sufficient quantity of radium bromide to undertake methodical researches on the action of radio-activity on the development of plants; A. Labbé, 2000 francs, for the study of the modifications presented by various animals passing from fresh to salt water or the reverse; de Gironcourt, 3000 francs, for the publication of the results of his scientific expeditions in Morocco and western Africa; M. Legendre, 3000 francs, to assist him in the publication of the maps and documents dealing with his travels in China; H. Abraham, 2000 francs, for the determination, with Commandant Ferrie and M. A. Dufour, of the velocity of propagation of the Hertzian waves between Paris and Toulon.

#### THE EDUCATION OF EUROPEANS AND EURASIANS IN INDIA.<sup>1</sup>

THE reality of the problem dealt with in the report before us calls for no demonstration. The Hon. Mr. Madge, himself a member of the community, as also of the conference which, at the invitation of the Government of India, met at Simla in July, 1912, was stating a sober fact when he said on that occasion that to his community education was a matter of life and death.

The problem has been said to have two phases, of which one is concerned with the future of the lower stratum of the Eurasian community—the crux of the half-caste question at its worst. The problem in its other phase does not necessarily involve the difficulties inseparable from mixed descent. Undoubtedly every European resident in India is anxious to send his children "home" for at least a part of their education, but there is a substantial and increasing body of Europeans in India who must educate their children there. It is in this body that this phase of the problem centres. Dr. Graham, of Kalimpong, once wrote that one of the saddest experiences was to trace the gradual downcome, generation by generation, of the descendants of men who had helped to build up the British Empire in India.

The more specifically Eurasian problem is clearly not yet solved, for Sir Harcourt Butler, the President, told the conference that according to the best calculation available there were some 7,000 children who were receiving no education, and a Roman Catholic priest stated that there had been recently 134 appli-

<sup>1</sup> Report of the Conference on the Education of the Domiciled Community in India, Simla, July, 1912. Pp. iv+202. (Calcutta: Superintendent Government Printing, India.) Price Re. 1 or 1s. 6d.

cations for four vacancies in a Roman Catholic Orphanage. Compulsion was discussed, and, though the President made it quite clear that Government had no present intention of legislating to make attendance at school obligatory—the administrative difficulties involved would be very great—the conference passed a resolution pressing upon Government its opinion that the introduction of compulsory education was necessary to secure that certain classes of the community attended school, adding that it was recognised that this would involve the introduction of free education for all who could not pay fees.

The report shows that the conference realised that the solution of the second of the two phases of the problem lies primarily in the provision of efficient secondary schools, as such institutions are defined in the regulations of the English Board of Education, and now generally understood in this country, but the somewhat nebulous discussion which took place on the grading of schools suggests that those who in India are tackling the problem would be well advised to define more exactly the terms, such as "elementary," "secondary," and "collegiate," which are now becoming current there.

The European schools in India are provided and maintained by the denominations, the local governments assisting with grants and generally supervising the working of the system. This system will, and should, remain, for Government could not possibly undertake the task, and it is a mere waste of time to make vague proposals for Government schools. If, however, there is a danger to which the present system is prone, it is to be found in the tendency to attempt in a considerable number of schools work which could be done more efficiently in a few. The difficulties resulting from this quite natural tendency would decrease if there was less confusion as to the respective functions in the community of the elementary and the secondary school. It may be, as was suggested at the conference, that there is no place in the domiciled community for merely elementary education, though with 7000 children without any education at all this sentiment would seem to savour somewhat of aspiration.

In England we are beginning to appreciate the utility of teaching a child certain rudiments and then at the age of fourteen setting him adrift to find for himself. It is one thing to admit this; it is quite another thing to proceed as if it were within the scope of practical politics that every child should go through a secondary-school course, and to belittle in consequence the function of the school of the higher elementary type. The value to the community of a particular type of school does not depend upon the name by which that type is designated, and as one member of the conference pointed out, no one type of school is really higher than another. If one of the results of the recent Simla conference is the elimination from the minds of managers of the sway of "motives of fictitious prestige," a real advance will have been made.

#### THE MOUNT WILSON SOLAR OBSERVATORY.

THE Mount Wilson Observatory received from the Carnegie Institution of Washington the grant of 254,075 dollars, or 50,815*l.*, for the year 1912, for construction investigations and maintenance, and the report of the director shows the magnificent way in which this great sum is being utilised. It is impossible in a short note to give an adequate account of the very admirable report of the director, which covers forty-one pages of very condensed matter. On