

importance is attached by the Islington magistrate to the question of taste or flavour, and no limit is placed by him upon the amount of chemical impurities which whiskey may contain. Although there is scanty reason to believe that the higher alcohols, furfural, and compound ethers in the proportion in which they exist in pot-still whiskey as ordinarily consumed are injurious to health, yet, nevertheless, one cannot view with complaisance a legal definition of whiskey which allows the quantities of these substances to be unlimited. The only safeguard which the public will have will be their own taste. They have shown distinctly what they like in that nine-tenths of the whiskey consumed to-day consists of a blend, with more or less pot-still whiskey, of this same patent-still whiskey, which is to be whiskey no longer, because technologically, if not chemically and dietetically, it diverges too widely from the mediæval and sentimental "usquebaugh."

Two further points in the judgment of the Islington police magistrate will be of interest to technologists; the first is the absolute condemnation of maize as a constituent of the mash from which whiskey is to be made. This is especially interesting because to those cognisant of the literature of the subject this question of maize as a constituent of brewing and distilling mash is by no means a new one. Although precedent seems to be no justification at Islington, it is a fact that maize was used as a constituent of distilling mash previous to 1881. We choose this date advisedly, because in 1881 the use of this same opprobrious maize as a constituent of brewing mash was by the Free Mash Tun Act actually legalised. Again, the Select Committee on bonded spirits was fully cognisant of the use of maize in distilling mash, and in its report of 1891 had nothing to say against this grain. Still further, in 1898 the Beer Materials Committee, after a most exhaustive inquiry, refused to prohibit the use of maize. Lastly, the American Pharmacopœia, which includes whiskey as an official preparation of alcohol, specifically states that it may be made from maize. So far as we can gather, the objection to maize is that it cannot be, or at any rate is not, ripened in this country.

The last point which we have space to consider is the statement that, apart from taste and flavour, patent-still whiskey has a different effect upon the consumer from pot-still whiskey. It is true that the therapeutic evidence at present at our command upon this subject is somewhat scanty, but what there is points to the conclusion that practically the only active constituent in whiskey is ethylic alcohol, and that if a given dose of whiskey differs otherwise than in taste and flavour from a proportional amount of pure ethylic alcohol equally diluted, this difference is due entirely to the presence of certain compound ethers. Now as a matter of fact, although patent-still whiskey contains a smaller coefficient of impurities than pure pot-still whiskey, the ethereal moiety of the impurities is approximately the same in both. At any rate, the amount of compound ethers taken in an ordinary dose of patent-still or blended whiskey so nearly approximates to that taken in any ordinary dose of pot-still whiskey that no therapeutical difference is, *a priori*, to be expected between the two beverages as consumed. The direct evidence we have upon this subject bears out this *a priori* reasoning.

Over and above the details which have been brought to light in these whiskey prosecutions, everyone must be struck by the curiousness of a legislation which allows disputes of this kind to be decided in a police court. During the past few years many special committees have sat upon subjects relating to the working of the Sale of Food and Drugs Act, and not a

few of them have specifically recommended either the institution of a permanent court of reference for these matters or at any rate that they should be laid before some specially organised tribunal. It is sincerely to be hoped that before long these recommendations may be adopted.

THE ROYAL COLLEGE OF SCIENCE.

THE relation between the University of London and the proposed new Royal College of Science has been the subject of some discussion since the publication of the report of the departmental committee on the college, described in our issue of February 8 (p. 344). It is devoutly to be hoped, however, that the consideration of this matter will not divert attention from the essential point of the committee's report, namely, "that it is desirable that the new institution should be established immediately, and that its organisation should proceed without delay." Divergent views may be held as to the nature of the connection between the University and the new College, but there can be no two opinions as to the folly of delaying the establishment of the institute, as recommended by the committee, while questions of control are being decided.

The subjoined letter from Mr. C. McDermid, hon. secretary to the British Science Guild, appeared in yesterday's *Times*, and the plea of urgency contained in it is endorsed in a leading article in the same issue.

I am directed by the executive committee of the British Science Guild to request you to be good enough to give publicity to the following expression of the views of the committee on a matter of great national importance.

The departmental committee on the Royal College of Science has shown in its final report that a start can at once be made to provide for the most advanced instruction and research in several branches of applied science, which all are agreed are imperatively necessary in the interests of our national industrial progress.

The danger of delay in giving effect to the recommendations of the departmental committee is recognised by the leaders in science and industry, who are largely represented among the members of the British Science Guild.

The Government have signified their willingness to hand over to a new governing body the present buildings of the Royal College of Science and Royal School of Mines, the new chemical and physical laboratories, which are approaching completion, and some adjacent acres of land on which to erect new buildings. In addition to this it is understood that the Commissioners of the 1851 Exhibition will provide an additional building site, and that the council of the City and Guilds of London Institute will cooperate in the scheme.

The Government are prepared to provide a yearly grant about equal to the interest at 2½ per cent. on one million pounds sterling, and there is reason to hope that the London County Council will vote an approximately equivalent sum. In addition to this there is the munificent gift of 100,000*l.* from Messrs. Wernher, Beit, and Co., and the sum that it is expected will be provided for the equipment of the new mining and metallurgical laboratories as the central object of a national memorial to the late Sir Henry Bessemer.

In view of all these most favourable conditions the executive committee of the Guild earnestly hope that neither the question of the ultimate and final relationship of the new institution to the London University nor any other matter will be allowed to interfere with the immediate appointment of at least an organising governing body. This body might deal *inter alia* with the status and qualifications of the professional staff required and obtain detailed expert advice with regard to the new buildings to be erected.

Probably no more propitious time for founding a college of the kind contemplated could be offered

than the present. The Perkin jubilee has been the means of arousing a certain amount of interest as to the cause of lost industries, and the remedies to be applied if we are to secure industrial progress in the future. Enlightened manufacturers are prepared to give substantial support to an institution which will aim at bringing scientific knowledge in close relation with industries and industrial needs. Not to take advantage of the present desire for action would be dilatory policy; and if the scheme is held up while discussion takes place upon its academic aims and relationships, nothing could be more disappointing to those who are anxious to see the establishment of an institute capable of rendering great service to the community.

In the proposed new college no provision is to be made for biological subjects; and Prof. Ray Lankester has written a letter to Lord Rayleigh, president of the Royal Society, pleading for the recognition of the fact that the needs and the importance of these sciences are as great or greater, and that they are at present well-nigh destitute of any endowment, or of adequate provision at the public charge of laboratories and the means of research. Prof. Lankester shows that there are many branches of applied biology of importance to the State, and though he does not propose any formal action to the council of the Royal Society he trusts "that means may be devised of obtaining an assurance from the Government of not merely continued, but increased, provision for the highest work and training in the various sciences of the biological group—including geology."

PROF. SAMUEL PIERPONT LANGLEY.

AT the zenith of his reputation, and possessed of his full capacity for work, America and science have to regret the death of Prof. Langley, who for nearly twenty years directed and controlled the energies of the Smithsonian Institution. The objects promoted by such an establishment are so varied, the interests that it has to maintain are so numerous, that its direction can only be confidently entrusted to one who combines the skill of the administrator with the training of the man of science. The energy displayed by Prof. Langley in the conduct of the Smithsonian Institution, and its steadily increasing influence under his direction, show that he loyally appreciated the intentions of the founder, and that he proved himself a worthy successor to Joseph Henry and Spencer Baird, names still warmly treasured in the memory of the American nation. We may recall, though we cannot do justice to, some of the more important features that have marked his connection with the institution. His supervision of the museum, and his earnest endeavour to make it more valuable for instructed and uninstructed alike, led to re-arrangement, and especially to the foundation of the children's room, a feature which may serve as a model for similar institutions. The Bureau of American Ethnology is a national undertaking that has long been conducted on spacious lines, but under the late director this department has assumed magnificent proportions, the care of which was an enormous responsibility that even the assistance of able colleagues could not wholly remove. The publications of this bureau show only the thoroughly digested scientific conclusions, and represent but a fragment of the immense amount of work actually accomplished. But, perhaps, in the establishment and management of the zoological park we see the personal influence of the director most conspicuously exhibited. It was his dream to establish a park in

which the wild animals of his native land might live as nearly as possible under conditions natural to them, so that they might breed and thrive in captivity as in their native haunts. The difficulties in the way might well have daunted one less enthusiastic. More than once the question of abolishing the park has been considered, and over and over again he had to fight the battle in the teeth of hostile or indifferent politicians, who could not be made to appreciate the value of the scheme, or to recognise that the preservation of the native animals, threatened with extinction, was a trust committed to their charge. He lived to see this scheme placed on a permanent footing, and if on a more modest scale than he could have wished, he could feel that his insistence had not only preserved the nation's heritage of wild animals, but had opened up important regions of biological research and of zoological art.

But, notwithstanding the severe demands the care of such an establishment must make, Prof. Langley did not allow his activity to be wholly absorbed in the interests of the Institution. He never forgot that he was a physicist and an astronomer before he became an administrator. As a physicist, the problem of flight largely engaged his attention, a subject to the consideration of which he was led by his studies on the internal force of the wind. To what extent his experiments advanced the problem of aviation it would be premature to pronounce. The form of aërodrome which he favoured was capable of making flights of a mile, unsupported except by the mechanical effects of steam engines. But these successful flights were carried out on models. The application of the same principle to larger machines was, as he contended, never fairly tried. The launching apparatus was ineffective, and his machine never got into the air at all. But if its capacity for sustained flight was never tested, some of the mechanical features that he tried and adopted will no doubt find their place in later constructions. As an astronomer he will be remembered for his direction of the Allegheny Observatory and the important work which he accomplished there on the sun and in the department of spectroscopy. His drawings of the solar surface, made nearly forty years ago, remain unsurpassed for delicacy and truthfulness, while his views on the physical constitution of the sun are worthy of the closest attention. As an experienced observer of solar eclipses he was also well known, and thirty-five years ago, when the spectroscopic examination of the sun's surroundings had made but little advance, he rendered yeoman service. The invention of the bolometer constitutes a distinct claim on our gratitude. This sensitive instrument affords the means of measuring minute changes in heat arising from the change in the electrical resistance of an extremely thin strip of metal. By its use Prof. Langley showed that the corrections for atmospheric absorption, deduced by earlier observers with less perfect instruments, are all too small, and consequently the generally received value of the "solar constant" has been considerably increased. With the same instrument our knowledge of the infrared spectrum has been greatly increased. The heating effects from rays unsuspected in previous investigations have doubled the known extent of the solar spectrum. By the aid of rock-salt lenses and prisms Prof. Langley was able to show that bands of atmospheric absorption were found to alternate with bands of solar radiation, a fact of no inconsiderable importance in terrestrial meteorology.

As a writer the late director of the Smithsonian Institution was well known for his powers of graphic description and vivacious style. His "New Astronomy," published many years ago, attracted very