The objection that a parole is a pardon, and must be granted under the laws and conditions governing pardons, Mr. Wines notices at some length. He holds that a parole is not a pardon, for the reason that when a convict is pardoned his liability under the law ceases; but when he is paroled, and until his conditional release merges into one that is absolute, he is still in the custody of the law and under sentence. This being an important point, Mr. Wines discusses it in detail. He shows, that, if a parole is unconstitutional, so is the time allowance now made in almost every state in the union to the convict, for good behavior while in confinement; and adds that "the history of the discussion of the indeterminate sentence, both at home and abroad, shows that until this legal, quasi-constitutional objection to it is disposed of, no progress can be made in the way of securing a candid and careful consideration of its practical advantages."

Passing from the legal to the practical side of the question, Mr. Wines claims, that, not only the *a priori* argument, but the results of its practical workings, are entirely in favor of the system of conditional liberation. Applied in any prison, it affects both officers and convicts. The former have a new responsibility thrown upon them, that of "judging at what moment each convict committed to their care is fitted for the test of character outside of the prison enclosure;" while the latter, finding his hope and his desire of personal freedom called upon, becomes an efficient and willing co-operator in his own amendment. "The system wakens in the breast of every prisoner who is not sunk in intellectual or moral inbecility, the sense of individual responsibility, and stimulates it to the highest degree of activity which he is capable of sustaining." The system is also recommended to students of criminal jurisprudence, because of the benefits it will confer upon society at large. It lessens the suffering of the family and friends of the criminal, and it diminishes the expense required for his maintenance. It is at once a thorough and the only practicable means of testing the prisoner's reformation in prison.

Mr. Wines does not overlook nor pass by the practical difficulties which are urged against the adoption of the system he is advocating. He considers them in turn. The first of them is "the ignorance and apathy of the public with reference to every phase of the question of prison discipline." As this has stood in the way of many important reforms before now, and has always had to yield in the end, Mr. Wines declines to give it any serious attention. It will cure itself. To the objection that a prisoner is naturally a hypocrite, and that therefore no correct judgment can be formed as to his improved character, it is answered, "How does this apply to the system of conditional liberation any more than to the good-behavior laws now so common?" In the United States, concerted action on the part of the various states would be necessary, in order to operate the system effectually. No special watching of the paroled convict is desirable, and the writer quotes prison-director Sichart of Wurtemberg, to the effect that police surveillance is undesirable; for the paroled prisoner should not be subjected to unnecessary mortification. What he requires is protection against any hinderance which may exist to his honorable success; and in no event should surveillance of any description be continued longer than the circumstances of each case seem to require.

Mr. Wines then develops his ideas as to the classes of convicts to whom the privilege of conditional liberation should be granted, the stage of imprisonment at which a parole should be granted, and the authority to whom the discretionary power of granting the parole should be entrusted. Statistics are quoted showing, that, of 1,695 paroled prisoners in Bavaria, only 59 relapsed; of 782 in Wurtemberg, only 8 relapsed; and of 286 in Saxony, only 6 relapsed, The statistics on this point gathered from the experience of the New York state reformatory at Elmira, are already known to our readers.

LONDON LETTER.

The character of the Friday-evening lectures at the Royal institution (the scene of the labors of Davy and Faraday) is probably well known to most readers of *Science*. The after-Christmas series was opened by Sir William Thomson, who discoursed to a brilliant audience upon the probable origin, extent, and duration of the sun's heat. Adopting, apparently unreservedly, Helmholtz's theory of its origin being due to the shrinkage of its mass, owing to gravitation, he pointed out that gravity was 27½ times as great at the sun (at present) as at the earth, and how different, therefore, solar physics were from terrestrial. The mystery of the relation between gravitation and the other properties of matter had hitherto proved insoluble. A body falling through only forty-five kilometres on to the sun's surface, would develop more energy than any known chemical combinations, and hence he relegated such combinations to the domain of the determining influences of merely incidental changes. Much time was devoted to calculations of solar energy from the point of view of the 'mechanical equivalent of heat.'

The amount of solar shrinkage was probably about 0.01 per cent of his diameter in 2,000 years. Fifteen million years ago the sun was probably four times its present diameter, and in another twenty million, its density will equal that of lead, and the activity of solar radiation will probably greatly diminish. At present it was about 75,000 horse-power per square metre. Looking back, although biology demanded more time, the study of dead matter would give twenty million years as a maximum past limit, and ten million years as a maximum future limit, of the heat received at present by the earth from the sun. The speaker created some amusement, towards the end of his discourse, by admitting that 'However, after all, we know nothing whatever about it!'

The Prince of Wales has just been elected an honorary member (probably the first British one) of the Linnaean society, which has hitherto been somewhat chary of bestowing its 'parchments sealed with wax.' This famous society was founded in 1788, and is the owner and custodian of the library, manuscripts, and herbarium of the illustrious Linnaeus, who died in 1778. These were originally bought from his family for about $5,500, by Dr. James Edward Smith, who founded, and was first president of, the Linnaean society, which has comprised in its roll all the most distinguished naturalists of the day, and may be considered to be a select club of scientists.

The 'Christian evidence society' aims at counteracting the atheistic spirit which is alleged to be spreading among the masses in London. Latterly, its purely theological meetings and lectures have been frequently supplemented by lectures on scientific subjects delivered by men of well-known scientific position. In the west end of London, during the present month, the presidents of the Royal and of the Linnaean societies (Dr. Stokes and Mr. Carruthers) will take part in such a course, the former taking for his subject, 'Is the demand for demonstrative evidence in religion reasonable?' Dr. J. H. Gladstone and Mr. W. Lant Carpenter also take part in this course.

On Jan. 17 a notice was issued by the post-office cancelling all previous notices as to delay in the telegraph service owing to the break-down occasioned by the storm of Dec. 26. For the week ending Jan. 15, the number of messages was 803,000, as against 736.000 for the corresponding week of last year, notwithstanding the fact that senders were warned as to probable delay. The department has been able to have this good record while the wires were down, mainly through the free use of the Wheatstone automatic fast-speed transmitter, which for a long time has been doing 700 words per minute (350 in each direction, the line being duplexed) over one wire between Newcastle and London, about 300 miles. Every effort was made to get messages through, no matter how circuitous the route. Some messages reached London from Paris *via* New York. In the angry controversy which has been raging on overhead *versus* underground lines, the following statements have been put forward on authority: The English post-office has 20,000 miles of underground lines, as against 22,000 in Germany. The cost of an underground wire is £350 per mile, and of every additional wire, £15, as against £35 and £10 respectively for overhead wires. Underground wires diminish the speed of signalling from 25 to 75 per cent over long distances. The cost of renewal and maintenance is about the same in both cases.

The present year is the jubilee of the queen's accession to the throne. There is considerable fear that the proposal for an 'Imperial institute,' as a commemoration thereof, will not be adequately supported, and, in scientific circles, much feeling exists at the scanty recognition of science in the constitution of the committee (nominated by the Prince of Wales) which framed the scheme, and, *a fortiori*, in the scheme itself.

An interesting history of the 'Science and art department' has just been issued, showing its growth during the last fifty years, and the encouragement given by the state in this way to instruction in science and art. Its headquarters are in South Kensington, which is in connection with about 1,500 scientific schools all over the United Kingdom. Twenty-five distinct branches of science are taught, and the annual grant for its maintenance approaches half a million pounds sterling. This is mainly distributed on the results of the May examinations, held at the end of the winter's teaching. In connection with this are the scholarships due to Sir Joseph Whitworth's contribution of £3,000 per year, given in 1868.

W.

London, Jan. 22.

HONOLULU LETTER.

MR. E. D. PRESTON of the U. S. geodetic survey has just arrived and begun work under temporary engagement with the Hawaiian government survey. His task is to establish a normal or standard latitude for this group. The latitude of several points has already been carefully determined, — two such in 1883 by Mr. Preston in connection with pendulum observations, and some others by the British observers of the transit of Venus. Since full geodetic results have been obtained by inter-island triangulation, serious discrepancies are found to exist between these and