serum when used to counteract the effects of various poisons separated by him from the membrane and from the spleen in cases of diphtheria. This appears to the committee to be a most important question and one that must be settled before the mode of action of anti-toxic serum can be understood, and they feel that no one can better undertake this work that Dr. Martin. The committee have some other lines of research under consideration, on which they will fully report to the colleges in due course."

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Some interesting statistics have been formulated by the Glasgow and West of Scotland Mission to the Outdoor Blind. This society does excellent work in arranging for visits to the poor blind—a class of the community which is rather apt to be neglected. To those deprived of the every-day pleasures and amusements of life and thrown entirely on their own resources, the visitors of this society must indeed be welcome, and the pleasant little talks and readings which accompany them must be very red-letter events in the dull lives of the blind. An annual 12,000 visits sums up a considerable amount of happiness. It is noteworthy that a very large proportion of cases of total blindness occur in middle life; 80 per cent. of the men and 67 per cent. of the women were over twenty years, which makes their condition much more sad. To have had the glory of sight and to have lost it is infinitely worse than never to have known it at all.

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Several deaths which have recently taken place among the workers at manure factories, through the absorption into the system of anthrax microbes from the bones of cattle used in the preparation of manure, have caused representations to be made at the Home Office with a view to special rules being framed for the regulation of these factories and for the lessening of the dangers which are inseparable from such an occupation.

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The return published by the *Annales de l'Institut Pasteur* as to the number of patients under treatment there during the last quarter of the past year gives the total as 333. Of these, 58 were bitten by animals experimentally proved to be mad, 210 by animals declared by veterinary certificate to be mad, and 65 by animals only suspected to be so, the bites being inflicted in 316 cases by dogs and in 17 by cats.

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The London and South-Western Railway Company have contributed £105 towards the St. Thomas's Hospital special appeal fund for opening closed wards, and have increased their annual subscription from £15 to £26 5s.

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Science Notes.

PRECIOUS STONES.

"Precious Stones and how to Distinguish Them" was the undoubtedly popular subject of a recent lecture at the Imperial Institute, and Mr. Miers treated it in a very interesting manner. In his opinion there is, perhaps, no subject in which experts have been so slow to take advantage of practical methods supplied by science as in the manipulation and discrimination of precious stones. As one might expect, mistakes are constantly being made. Mr. Miers, so far from underrating the great value of that knowledge which results from long experience, or from denying that in ninety-nine cases out of a hundred the expert may be absolutely right, said that everyone must admire the confidence with which a practised eye can even pick out from several packets of diamonds those which came from a particular mine. Again, a professional expert can sometimes in five seconds arrive at a decision which could only be reached in half an hour by scientific methods; but then the opinion of what we may term the old-fashioned expert need convince no one but himself, whereas the evidence of scientific tests must convince everyone who sees them.

To make his point clear the lecturer quoted an exact parallel in medical practice. A doctor may be able to diagnose diphtheria or phthisis by their symptoms only, but in recent years bacteriology has provided a new method of examination, and the presence of the characteristic bacillus is proof positive of the existence of the disease.

What then are the methods of identifying precious stones which science has discovered? Two methods, which are of the nature of scientific experiments, but which are liable to error in practice, are frequently used. One is to test the hardness of the mineral by scratching it with other substances, or scratching other substances with it. The diamond is the hardest substance known, and therefore nothing can scratch it. If a stone scratches a quartz but is scratched by topaz, it is said to have a hardness between quartz and topaz. All minerals, including gem-stones, have been tabulated according to their hardness with reference to ten standard stones.

The second scientific test in general use is to determine the specific gravity of the stone, *i.e.*, its weight compared with that of water. The stone is weighed suspended by a thread, first in air and then in water. The difference between the first and second weight is the weight of a mass of water equal in bulk to the stone, and from this the specific gravity can be easily obtained. The practical objection to this test is that it is difficult to weigh with accuracy a very small stone under water. Chemical analysis is, of course, out of the question, since it would necessitate the destruction of a portion of the stone. When the stone is already cut this is impracticable, and even scratching the stone is open to objection.

The instruments which Mr. Miers recommends are the microscope, the spectroscope, the goniometer and the dichroscope.

The characteristic appearances of different gems seen by means of a polarising microscope are not easy to describe without illustrations. The spectroscope enables one to detect certain elements in gems as it does in the case of the sun. The continuous spectrum

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