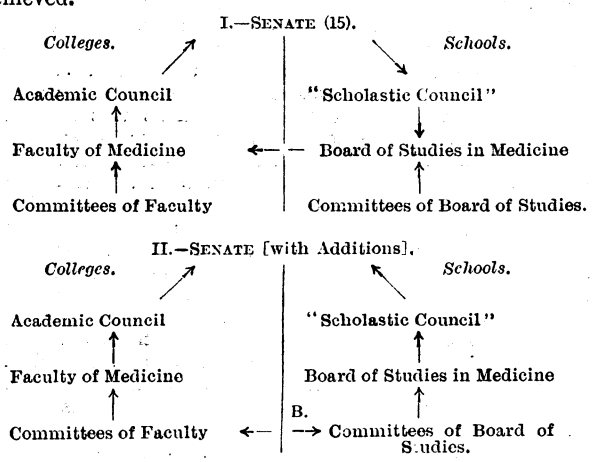
same representation on the Senate as the Report concedes to the Academic Council. The subordination of the Schools to the Colleges which is contemplated in the Report thus disappears. If it is thought advisable to have contact between the Schools and Colleges, this might be arranged by the common session of the Committees of the Faculty and of the Board of Studies (indicated in the diagram by the double-pointed arrow, B). This would mean an interchange of views on an equal basis; and the common outlook thus obtained would usefully leaven both the parent bodies to which these Committees report. If it be objected—and the objection has been made—that this is to separate the Colleges and the Schools into watertight compartments, the answer is that the Commission has so decreed it, and it is useless to attempt to override their Report. All that can be done—if, indeed, that little is possible—is to correct the most obvious inequalities; and I repeat that it is only by concerted action by as many Faculties as may be practicable that even this may be achieved.



SCIENCE NOTES.

CARNOTITE, a yellow mineral found in sandstone in Western Colorado, would appear to have become one of the chief sources of radium. It occurs usually as light yellow specks disseminated through the sandstone or as yellow incrustations in the cracks or pockets. It appears from an article in *Science* of October 31st that the carnotite so far obtained in Colorado has been exported to Germany or France, and that the price of radium has been fixed by the European manufacturers. A National Radium Institute has now been formed to work in association with the Bureau of Mines at Denver, Colorado, and the technical operations will be guided by the scientific staff of the bureau. Carnotite is a hydrated vanadate of uranium and potassium, and the institute proposes not only to collect radium, but also to study the separation of uranium and vanadium. All processes, such as the details of apparatus and plant, will be published for the public benefit, the main object of the institute being to procure enough radium to conduct extensive experiments in radium-therapy, with special reference to the treatment of cancer; chemical and physical investigation will be carried out also. Professor Soddy, in commenting on this scheme in *Nature* of last week, expresses the opinion that apparently the question of the supply of radium, in whatever country it is found, will be regarded more and more as of national importance, and that a nation trusting to the equitable operations of the laws of supply and demand is likely to be squeezed out. He therefore considers it to be a matter of public interest to this country, and that it should be lifted once for all above the plane of private venture and financial speculation. He appeals to the Institution of Mining and Metallurgy in this country to appoint an expert committee mainly of practical mining authorities, but with representatives of technical chemistry and medicine, to consider the situation and take energetic steps to meet it.

It having been shown that the serum of normal dogs contains a ferment capable of splitting up a peptone prepared from dogs' muscle tissues, experiments were extended by Pincussohn and Petow (*Biochem. Zeitschr.*, October 28th, 1913) to other animal serums to see if animals possessed in their serum specific ferments to their own tissue-peptones. Abderhalden has very successfully demonstrated that in pregnancy there is a ferment action elaborated against the proteins and peptones of the placenta, and the practical application of his findings is now well known. He has used two methods, one, the dialysation method for the demonstration of proteolytic action of the pregnant serum, and the second, the optical method for its peptolytic power. The "guardian ferments," as they have been called, obtained by these methods are probably not identical; they do not correspond, for example, to trypsin, which has, combined in itself, both a proteolytic and a peptolytic power. Observers have noted a discrepancy between the two methods. In general, normal serum does not degrade organ protein. It must be assumed that within the body useless protein, that is, from functionless cells, must somehow be degraded through peptones to amino acids, but this is probably brought about by an inherent autolytic property in the cells. The blood acts as a vehicle not merely for free amino acids, but in all probability also for larger complexes, and it would seem reasonable to imagine that there must normally be guardian ferments capable of converting possibly harmful complexes into innocuous fractions. The authors have attempted with success to discover whether the normal serum of animals of certain species have the power of breaking up peptones from organs of that particular species in a specific manner. They employed peptones obtained by partial hydrolysis with sulphuric acid from the muscle tissues previously washed quite free from blood, and the ferment action of the tested serum was indicated by the rotation observed in the polariscope. It was found that the serum of various animals acted only on peptones of the particular species, but not on those of foreign species, and that no action was called forth in the case of more completely hydrolysed or indifferent peptones. It was noted, however, that dogs' serum degraded the peptone derived from fox muscle, and vice versa, and, from other indications also, it was clear that generic relationships of animals were reflected in the action of their peptolytic ferments. One very striking and important phenomenon was brought to light, namely, that the blood serum of normal guinea-pigs has a general peptolytic power, as Abderhalden had previously hinted, for it was found that this animal's serum acted on peptones derived from other species, and if further investigations support this observation, we shall have to consider whether guinea-pig's serum contains a plurality of ferments or a universal ferment against different peptones. In practical work on immunity we employ mostly (almost exclusively) guinea-pig serum as a source of complement, and the question of plurality of complements is an old battle-ground. The experiments lend support to the view that serum complement and serum ferment have much, if not all, in common; and it will be safe to predict that the observations of the authors will stimulate further research into the question.

Human milk, on chemical analysis, differs in three important ways from cow's milk: It contains much more lactose and much less protein and a greater percentage of substances of an unknown nature with little or no nitrogen in their composition. Meigs and Marsh (*Journal of Biological Chemistry*, October, 1913) have investigated these differences. Before any comparison of the two kinds of milk can be made it must be borne in mind that the composition of milk varies according to the period of lactation, and thus average figures are unsatisfactory. They find that from the beginning of the second month of lactation onwards the limits of normal variation are, for human milk, 2 to 4 per cent. fat, 6 to 7.5 per cent. lactose, and 0.7 to 1.5 per cent. protein; and for cow's milk 2 to 4 per cent. fat, 3.5 to 5 per cent. lactose, and 2.5 to 4 per cent. protein. These figures represent percentages of whole milk. With regard to the other constituents of both, the chemical nature of which is as yet unknown, they appear to be important constituents of diet. They contain little or no nitrogen, and are soluble in alcohol and ether. They are in greater abundance in human milk during the early periods of lactation, and gradually diminish as lactation progresses. Thus, in the

early stages they constitute as much as 1 per cent. of the milk, falling to half that amount from the middle period of lactation. In cow's milk from the middle period there are about 0.3 per cent. of these unknown substances.

LITERARY NOTES.

A FOURTH volume of the series entitled *Moeurs Intimes du Passé*, by Dr. Cabanès, editor of the *Chronique Médicale*, has just appeared. It deals with student life in Paris from the beginning of the thirteenth century to the present day. The book is published by Albin Michel, Paris.

Our German friends pride themselves, not without good reason, on their accuracy. But they, like Homer, sometimes nod. A few weeks ago, in one of the leading medical journals of the Fatherland, reference was made to an action which it was said had been brought by Miss Lind-af-Hageby against the Editor of the BRITISH MEDICAL JOURNAL. In the Vienna *Medizinische Klinik* of November 30th, we read in a paragraph of news from London that "they (the antivivisectionists), not discouraged by the failure of their leader, Lind-of-Hogeby (*sic*), in a libel action against the Editor of the BRITISH MEDICAL JOURNAL, Dr. Sluby (*sic*)—he had accused the antivivisection league (*sic*) of deliberate lying—they almost daily hold meetings in which their old parrot cries are repeated." There is a fine derangement of epitaphs here, but we are inclined to take it as a testimony to the part we have played in the battle against antivivisectionism that it should so readily be assumed that we were the defendants in such an action as that brought by Miss Lind-af-Hageby against Dr. Saleeby and the *Pall Mall Gazette*. We can only express our sympathy with Dr. Saleeby on the undesired honour that has been thrust upon him.

From the *Remedy* of the Persian poet Saadi, known also by the name of the *Bed of Roses*, the *Mercure de France* in a recent number reproduces various passages translated by Franz Toussaint. Among them is the following: A man contracted a disease of the eyes. He hastened to a veterinary surgeon and said, "Give me a remedy." The "vet." instilled into his eye a collyrium which he used for the eyes of animals, and the poor fellow became blind. The affair was taken before the Cadi, who gave judgement as follows: "The veterinary surgeon will not be fined. If this patient had not been an ass he would not have consulted such a practitioner." Whereat, we suppose, there was laughter in court which was at once suppressed. We hope the judicial wit satisfied the plaintiff. The moral drawn from the story by Saadi is that an intelligent man does not entrust difficult tasks to an incompetent person. Although the maker of mats can weave, he is not considered fit to do delicate work in silk.

In the recently published *Life of Henry Labouchere*, by Algar Labouchere Thorold, we read:

> Labouchere when young went to Marburg to reside in a German family for the purpose of acquiring conversational fluency. . . . While there he frequented the hospital and attended the lectures given for the instruction of the medical student. He was always fond of developing extraordinary theories on the subject of medical science more remarkable for their originality than for their probable ultimate utilities. The authority upon which these theories would be based was invariably that of the lecturer at the Marburg hospital. Even as late as 1905 Mr. Labouchere still remembered his medical student days. He wrote to one of his sisters in that year on the occasion of her son becoming a doctor. "A doctor is a good profession. I learnt doctoring at Marburg in order to learn German. I rather liked it, and have vainly offered to doctor people gratis since then, but no one seems inclined."

Long afterwards, however, we find "Labby" giving medical advice to one of his staff. Perhaps it is owing to the impress thus given to *Truth* by its founder that it has continued to give attention to medical matters even to the present day. Its oracular utterances on these subjects are amusing if not always edifying.

A. Corlieu, in a study of the last days of Richelieu, says the Cardinal was a tall, thin man of nervous, bilious temperament. He died at the age of 59. He had been drugged, or drugged himself, to an extent almost beyond belief by us in these days. In one year (1635), when he was 50, he took seventy-five enemas, and one hundred and twenty-seven boluses of cassia, without reckoning laxative medicines prepared by his apothecary, the bill for which was 1,401 livres, 14 sous. He was used up by the strenuous life he had led. About the middle of August, 1642, Richelieu fell ill. For some time abscesses formed in the right arm, so that he could not write. The arm had wasted considerably, and when he dictated his will on May 23rd, 1642, the notary signed for him. Besides these abscesses, which had to be opened, he had ulcerated haemorrhoids, which prevented his riding in a carriage. Montchal, Archbishop of Toulouse, who did not like him, reports in his *Memoirs* that the Cardinal's hand was rotten, as a consequence of a disease called *carbunculus*. He added the qualifying word *Narbonicus*, doubtless by way of allusion to the town of Narbonne in which were arrested Cinq-Mars and de Thou, who were tied up in a boat attached to that of the Cardinal. It was by boat that he reached Lyons on September 9th, and there the two young men were tried and beheaded on the 12th. While the Cardinal was at Lyons there was made for him a vast wooden machine in which was a bed. This was carried by twelve men who took it in turn. Some forty men accompanied him. He was thus carried to Roanne, where he embarked on the Loire to Baire, took the canal to Montargis, joined the Loing to Nemours, travelled by his machine again to Fontainebleu, where he slept, and finally arrived in Paris on October 7th. He left St. Germain on the 26th in his machine to go to his castle of Rueil, where on the 30th he was visited by the Queen. He returned to the Palais Cardinal on November 4th, still very unwell. In the night of Friday, November 28th, he was seized with violent shivering, with fever and pain in the side. On the 30th, as the pain increased as well as the fever, he called in Charles Bouvard, first physician to the king. Bouvard was a great bleeder, and in the night Sunday to Monday the Cardinal was bled twice. On the Monday morning there was some improvement, which did not last long, for on the afternoon of the same day the fever increased; there was spitting of blood with difficulty of breathing. The case was evidently one of pneumonia. After some further bleedings on December 2nd there was a consultation of physicians, who naturally approved of what the first physician had done, and decided on purgings and further bleedings. Wishing to know his exact state, Richelieu begged the doctors to tell him the truth; but they answered vaguely, saying that God could work a wonder to preserve him, but that they could give no definite opinion before seven days. Chicot, one of the king's physicians, being called privately, told the patient that he would be dead or cured in twenty-four hours. The Cardinal understood, but submitted to more bleedings and even took a pill prescribed by a quack who was called in. This seemed to do good, but about midday on December 4th he died quietly. The skull was opened and the brain examined. According to the report, all the organs of understanding were doubled and trebled; by this probably nothing more was meant than that the brain was remarkably developed. Like Napoleon, Richelieu had a brain which worked in separate compartments. If Richelieu shed a good deal of human blood it may be said that his doctors punished him in the same way. It was the age of bleeding and Bouvard was a great bleeder even for that day. He is said to have bled Louis XIII forty-seven times in one year, and Gui Patin in one of his letters says that he bled sixty-four times in eight months his nephew Cousinot, a doctor, for acute rheumatism. Another doctor, Jacques Mentel, was bled thirty-two times for a continuous fever. Patin himself was bled seven times for a bad cold, and Brayer eighteen times for a malignant continuous fever.

In the October number of the *Journal of Anatomy and Physiology*, Mr. F. Wood Jones, D.Sc., deals with some points in the nomenclature of the external female genitalia. Seventeenth century writers used a multitude of words to designate these parts. One of the popular terms, says Mr. Wood Jones, is worthy of some note. Helkiah Crooke (1651), after giving a long list, concludes, "We will call it the lap." Mr. W. Rutherford contributes a note entitled "A Swedenborg Mystery: The Rival Skulls."