

troubled times how soon an effort may be made to admit students to the examinations for the degree of B.M. who have not been through the Arts course. Pembroke College is to be congratulated on having so generous a son as Dr. Williams who is not forgetful of benefits received. The number of men who pass through the University content with the degree of B.A. without proceeding to the degree of M.A. is by no means creditable, and if they ignore their University still more do they ignore their College. To such actions like that of Dr. Williams are both an example and a dignified reproach.

STUDIES IN EXPERIMENTAL ALCOHOLISM.

Dr. Reid Hunt, chief of the Division of Pharmacology of the United States Hygiene Laboratory, has recently concluded an extensive series of studies in experimental alcoholism.¹ Dr. Hunt undertook a series of experiments which he considers prove that profound modifications of certain physiological processes result, in a comparatively short space of time, from doses of alcohol so small that no indications of intoxication are observed. From a consideration of the known general effects of alcohol upon the metabolism Dr. Hunt was led to investigate the effect of alcohol in causing an increased oxidation of certain substances, particularly acetonitrile or methyl cyanide. This substance is very different from hydrocyanic acid, in its chemical and physiological properties, of which the latter are almost certainly due to the slow liberation of hydrocyanic acid in the body. Giacosa found thiocyanic acid in the urine after the administration of acetonitrile, whereas *in vitro* the oxidation of acetonitrile results in the formation of acetic acid. In the organism the hydrocyanic acid which is first formed subsequently unites with sulphur to form thiocyanic acid. A set of experiments was carried out to determine the effects upon the toxicity of acetonitrile of various substances that are supposed to influence physiological oxidations. One of the first substances studied in this connexion was alcohol. The experiments, which were made on mice, show that animals to which alcohol has been administered for some time acquire an increased susceptibility to acetonitrile. This occurs after the administration of amounts of alcohol far too small ever to cause indications of intoxication and from doses which almost certainly cause no anatomical lesions. This increased susceptibility is not due to a general lowering of resistance but is associated with a distinctly increased power of the body to break up the molecule of acetonitrile. The alcohol was administered by pouring it upon the food, usually oats, and it was slowly increased in strength from 5 to 50 per cent. The acetonitrile was injected subcutaneously in aqueous solution. In one experiment a mouse was treated with alcohol varying from 5 to 35 per cent. in strength over a period of about six weeks. After an interval of two months a dose of 0.23 milligramme of acetonitrile per gramme of body weight proved fatal in two hours. In a control experiment the mouse recovered after the administration of 0.42 milligramme per gramme. In this series of experiments it was found that the mice which had received alcohol died from about one-half the amount of acetonitrile that was required to kill mice which had not received alcohol. The experiments further show that there appears to be something special about the poisonous action of alcohol, inasmuch as certain other poisons—e.g., amyl alcohol and chloral hydrate—which cause a loss of weight and so might be considered as likely to lower the general resistance, do not have this effect. The formation of thiocyanic acid from acetonitrile appears to be a protective reaction on the part of the organism, the thiocyanic acid being less poisonous than the hydrocyanic acid

formed from the nitrile. Experiments on guinea-pigs show that animals dosed with alcohol excrete 1.7 times as much thiocyanic acid after the administration of acetonitrile as do animals which have not been given alcohol. Dr. Hunt suggests that his experiments afford clear evidence that extremely moderate amounts of alcohol may cause distinct changes in certain physiological functions and that these changes may be injurious to the body in certain circumstances. The results also afford further evidence that in some respects the action of alcohol as a food is different from that of carbohydrates and also that in all probability certain physiological properties in moderate drinkers are distinctly different from those in abstainers. These experiments are of extreme interest because of the clear demonstration which has been made in recent years that alcohol is oxidised in the body and may replace fats and carbohydrates and to a certain extent the proteids of an ordinary diet. As a result the view that alcohol in moderate amounts should be regarded as a food is almost universally accepted by physiologists. The drift of opinion is certainly towards the view that it is in all respects strictly analogous to sugar and fats, provided always that the amount used does not exceed that which can be easily oxidised by the body. Under these premisses it would be expected that alcohol in a diet would have the same effect upon an animal's susceptibility to acetonitrile as has, for example, dextrose. But this is by no means the case. Mice fed upon oats and dextrose show a very distinct resistance to acetonitrile, often recovering from two or even three times the dose which is fatal to controls. Dr. Hunt considers that while these facts are not sufficient to justify the conclusion that in many cases alcohol has not a true food value, yet they are sufficient to indicate caution in applying to practical dietaries without further investigation the brilliant and very exact results of Chittenden as to the proteid-sparing power of alcohol.

THE SALE OF PROPRIETARY MEDICINES ABROAD.

IN an interesting paper on secret remedies, which appeared in a recent number of the *Pharmaceutical Journal*, Mr. J. Cofman has given some particulars of the restrictions that are placed upon the sale of proprietary medicines abroad. In France the law of the eleventh year of Germinal prohibits the sale of any compound medicine, the formula of which is not published in the *Codex Medicamentarius*, or in the *Bulletin de l'Académie de Médecine*, or by the Government. This law does not apply to the written prescriptions of qualified medical men. The publication of advertisements recommending medicines is also prohibited. This law does not appear to be enforced rigidly, as about 4000 proprietary remedies are advertised and sold throughout the whole of France. In Germany different States have different laws against secret remedies but a general law is now in contemplation. In some States of Prussia, Würtemberg, and Bavaria the public authorities have warned the people against quackery with excellent results. The advertising of secret remedies is prohibited in Brunswick and in other States, even when the formula is published. In Austria a new preparation may not be sold without a medical prescription until its therapeutic action has been clinically tested and approved of by the medical authorities. Pharmaceutical specialities may be made only by pharmacists in business from drugs or chemicals admitted in medicine and they must possess some element of novelty or show some improvement as regards their physical properties. If a preparation is sold only in the maker's own pharmacy the exact formula must be entered in a special register which is kept for inspection by medical men. If the preparation is to be advertised and sold in other pharmacies special authorisation must be obtained. The price is calculated from the

¹ Bulletin No. 33, Hygienic Laboratory, United States Public Health and Marine Hospital Service, Washington, February, 1907, pp. 43.

wholesale cost of the ingredients, working expenses being included according to a tariff. Advertising expenses and discount to retailers are not allowed to increase the cost of the article. The Customs houses and postal authorities refuse to deliver medicines entering Austria from abroad to anyone but a pharmacist. The advertising or sale of quack remedies is not allowed in Austria. In his letter at p. 1528 our Vienna correspondent also deals with the matter.

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ANNUAL ELECTION TO THE COUNCIL.

A MEETING of Fellows of the Royal College of Surgeons of England will be held at the College on Thursday, July 4th, for the election of four Fellows into the Council of the College in the vacancies occasioned by the retirement in rotation of Sir John Tweedy, Mr. Herbert William Page, Mr. Charles William Mansell Moullin, and Mr. Frederic Samuel Eve. Sir John Tweedy's period of office expired three years ago, but, being President, he was entitled to retain his seat on the Council until he vacated the President's chair. Mr. Moullin was elected to the Council in the year 1902 as substitute for the late Sir William MacCormac, and Mr. Eve was elected in the year 1904 as substitute for the late Mr. T. R. Jessop. The terms of office of these two deceased gentlemen as members of the Council would have expired this year. Mr. Page was elected in the year 1899, and thus completes the full period of office for a member of Council—eight years. The poll will be open for personal voting between the hours of three and five in the afternoon. A voting paper will, however, be sent to each Fellow who may desire to vote by post and whose address in the United Kingdom is registered at the College on June 21st, and Fellows will not be required to apply for voting papers.

THE WINTER ON THE SWISS MOUNTAINS.

THE following figures represent the mean temperature in the shade at 7.30 A.M. and at 1.30 P.M., mid-European time, the aggregate number of hours of bright sunshine, and the total fall of snow in inches of water during the four months December, 1906, to March, 1907.

—	—	Temperature.		Sunshine. No. of hours.	Rainfall.	
		7.30 A.M.	1.30 P.M.		Days with snow.*	Total fall.
Säntis 2500 m.	December	Deg. F. 9	Deg. F. 11	78	14	6.3
	January	13	15	88	18	9.3
	February	10	13	107	12	4.0
	March	15	17	167	16	12.3
Davos, 1560 m.	December	13	20	54	18	3.4
	January	16	24	62	16	4.2
	February	11	26	92	10	2.1
Gothard, 2100 m.	March	17	32	164	15	5.5
	December	12	16	†	6	3.7
	January	16	19	†	7	0.8
St. Moritz, 1841 m.	February	13	18	†	2	0.2
	March	19	24	†	3	1.4
	December	13	†	†	10	1.1
St. Moritz, 1841 m.	January	16	†	†	3	0.3
	February	13	†	†	5	1.0
	March	19	†	†	8	1.7

* A day when the snowfall gave a measurement of at least 0.04 inch when melted.

† No observations available.

The chief feature of the temperature is perhaps the little difference between the morning and afternoon readings at the two most elevated stations—Säntis and St. Gothard—when compared with the corresponding difference at Davos, which is on the lower level of 1560 metres above the sea. But although the frost was more intense at the highest

position the duration of sunshine was also greater, and this must have been more than a counter-balancing advantage. All the stations occasionally experienced morning temperatures below zero, but they were more common at Säntis and St. Gothard than elsewhere, and the lowest reading at 7.30 A.M. was no lower than 8° below zero, showing just 40° of frost. At Davos the thermometer was above the freezing point at 1.30 P.M. on 27 days, of which 16 were during March, three in December, and only two in January. Readings above 35° were extremely rare, and the highest point touched by the thermometer was 41° at Davos at the end of March. At the higher observing stations of St. Gothard and Säntis the freezing point was exceeded on only two or three afternoons, all of which were in March. The atmosphere was, of course, very dry except during foggy spells but the actual figures of relative humidity are lacking. The number of days on which snow was experienced was small at Säntis and St. Gothard, as was also the actual quantity.

MEAT EXTRACT AND YEAST EXTRACT.

WE have intentionally refrained, pending some inquiries as to the reasons underlying the extraordinarily conflicting evidence given by analytical experts, from making any comment on an important case recently heard at Marylebone police-court, in which the question at issue was whether a certain extract contained extract of meat or extract of yeast, or both. The case, in short, for the prosecution was that a certain preparation had been sold to the public as a meat extract, whereas, in fact, it was essentially a vegetable or yeast extract containing on an average only 8 per cent. of extract of meat and a proportion of flavouring to give it the appearance and smell of a meat extract. The case for the defence was that it did actually contain 18 per cent. of meat extract and that when the descriptions of the article were liberally interpreted they would be found to be scientifically correct. The evidence for the prosecution was based upon the amount of creatinine found in the extract by a process of analysis adopted by Mr. Otto Hehner. This witness stated that meat extract contains about 11 per cent. of creatine *plus* creatinine and in all the extracts of meat which he had examined he found that this amount was practically constant. This invariability of the amount of creatine in extract of meat was denied but at any rate a quite definite figure is obtained for beef—namely, 0.41 per cent., and as the yield of extract from beef is about $\frac{1}{5}$ th to $\frac{1}{3}$ th of its weight it follows that the creatine and creatinine in the extract should approximate to from 10.25 to 12.30 per cent., figures which are absolutely in accordance with Mr. Hehner's results. Dr. B. Dyer, Mr. A. C. Chapman, and Mr. Gordon Salamon, analytical experts for the defence, contended that the method adopted by Mr. Hehner was new, untrustworthy, and worthless, Mr. Salamon adding that he was amazed at such an able and responsible authority as was Mr. Hehner bringing forward such a test. The magistrate, Mr. Paul Taylor, also took this view and accepted this evidence. He dismissed the summons, with £200 costs. By the courtesy of Mr. Hehner we have obtained from him the particulars of the method which he adopted for the determination of creatinine, on the results of which he based his evidence. It is hardly necessary now for us to say that we believe his results and the opinion founded on them to be absolutely correct, for Dr. Dyer, Mr. Chapman, and Mr. Salamon have since acknowledged "the superior accuracy of Mr. Hehner's numbers." They, however, maintain that the proportion of creatine and creatinine in the manufactured product entirely accords with the sworn testimony of the manufacturers as to the quantity of meat extract used—viz., 18 per cent.—in whichever way the test is carried out, and the difference