solid tumour necessitated amputation of one-half of the jaw, from which the patient made a good recovery.

And now as regards the pathology and treatment of cystic disease of the lower jaw. You will remember that I removed a portion of the wall of the cyst from our patient, and this I submitted to Mr. Gould for careful microscopical examination, his report being as follows. "The piece of the cyst-wall that was removed is one-third of an inch thick. On section, it appears lobulated, the lobules being separated by fibrous bands and containing minute cysts. On microscopical examination, a section of the cyst-wall shows a glandular structure. There are coarse fibrous bands dividing the tissue into well marked alveoli of various sizes and of a rounded shape, which are lined by a single layer of indistinctly columnar cells, and filled with rather smaller granular cells. One of these alveoli is seen in the section developing into a cyst." This description corresponds very closely with that given by Mr. Wagstaffe of his examination of a specimen of cystic sarcoma of the lower jaw and with that of my case of cystic sarcoma just referred to, which was microscopically examined by Mr. Beck. In all three cases, the glands of the gums seem to have been the starting-point of the two diseases, which may be taken to be primarily the same. In the case of compound cysts, the cystic element predominates, and the glandular element is found only in the thickened cyst-wall; while in the cystic sarcoma the glandular element undergoes great hypertrophy, and the cysts may be developed in one portion of the tumour or scattered throughout its substance.

As regards the treatment of these cases, simple puncture of the cysts from time to time may be resorted to as a palliative measure; but a radical cure can only be effected by more active measures. Of course, it is most important to avoid any external incision, if practicable, and it is quite possible, in the majority of cases, to do all that is necessary from within the mouth with knife and gouge, particularly the latter instrument. Mr. Butcher of Dublin, who is a strong advocate of this practice, gives the caution to avoid wounding the facial artery within the mouth, because of the difficulty of securing it in that position; and he shows that, when the disease is found to be too extensive to be treated satisfactorily from within the mouth, a single incision below the jaw is sufficient for every purpose. The plan I adopted of crushing in the bony walls of the cysts is that recommended by the late Dr. Mason Warren of Boston, and gave very satisfactory results, a few minute spicula of bone being detached and coming away in the course of the treatment.

WHEN WE MAY BLEED, AND WHEN WE MAY NOT BLEED.

Part of an Address delivered before the East Sussex District Branch of the British Medical Association.

By HENRY MOON, M.D., F.R.C.P.,
Physician to the Sussex County Hospital.

In therapeutics, there has been an immense improvement. I will only take one instance amongst many others, that of blood-letting. During my apprenticeship at a large London institution, my chief employment from day to day was to bleed and cup those patients who had been seen by the physicians and surgeons. Blood-letting was then used as a remedy whenever there was an increase of the temperature and a quickening of the pulse; and, doubtless, this indiscriminate irrational application of so bold a remedy destroyed thousands of lives annually. In some cases, however, blood-letting, with the light of modern science, is still a remedy of great practical usefulness.

We may bleed in, for instance, cerebral hæmorrhage, if the impulse of the heart be strong, and its sounds loud; if the pulse be regular, and no signs of commencing œdema of the lungs exist, we should bleed without delay. Here a judicious timely bleeding may prevent the extension of the paralysis from the cerebrum to the medulla oblongata, which is essential to life.

In order that as much arterial blood as possible may enter the brain, we must try to facilitate the escape of venous blood, without, however, diminishing the propelling powers too much.

We may not bleed when, on the contrary, the heart's impulse is weak, the pulse irregular, and rattling in the trachea has already begun; we may be almost certain bleeding will do harm, since the action of the heart, which is already weakened, would be still more impaired, and the amount of arterial blood going to the brain would be thus still more decreased. When these conditions occur, the indications require just the opposite treatment, in spite of the original dis-

ease being the same, and being due to the same causes. Here, by the use of stimulants, we must strive to prevent paralysis of the heart; frictions, sinapisms, wine, ether, and musk, instead of bleeding, are called for.

We may bleed in acute croupous pneumonia, when the pneumonia has attacked a vigorous and hitherto healthy person, and is of recent occurrence; the temperature being higher than 105 deg. Fahr., and the pulse rating at more than 120 beats in a minute. Here danger only threatens from the violence of the fever; and a free venesection will reduce the temperature, and lessen the frequency of the pulse. In those, however, who are already debilitated, bleeding increases the dangers of exhaustion. Should the fever in pneumonia be moderate, blood-letting is not indicated, even in healthy and vigorous individuals. It cannot cut the fever short; indeed, the fever is more apt to persist, although in a somewhat more moderate degree; so that the enfeebled patient is thrown into greater danger than if he had to pass through a more violent fever, but with unreduced strength.

We may bleed in fluxion of the lung, arising from excessive cardiac action threatening life. The result of a bold venesection here is astonishing; as soon as the volume of the blood has become lessened, the pressure diminishes in the arteries (as it depends upon two forces: first, the energy of the cardiac contractions; secondly, the fullness of the cavities of the heart). The patients often breathe more freely during the operation, the bloody foam which they were expectorating vanishes, and life may be rescued from the greatest dangers by aid of the physician.

So also in collateral fluxion of the lung (acute hyperæmia) during the course of acute pneumonia, pleurisy, or pneumothorax, we may bleed. Here a large part of the dyspnœa depends upon the overfilling of the capillaries and swelling of the vesicles in the portions of the lung unaffected by the inflammation.

When patients die in the first stages of pneumonia or pleurisy, or shortly after the air has penetrated into the pleural sac and compressed the lung (pneumothorax), they die of collateral fluxion (hyperæmia) and collateral œdema. If collateral fluxion threaten life during the progress of these diseases; if the patient be attacked with intense dyspnœa, and a moist *râle* become audible; if the sputa become serous,—the danger is imminent. Then pay no regard to the small pulse, or rather, look upon it as a new reason for bleeding; for thereby the force of the heart is diminished, the pressure in the arteries of the hyperæmic parts of the lungs is also reduced; the capillaries are less full; the transudation of serum, which was threatening, or had already set in, does not occur or ceases; and here, too, we often see the patient breathe more freely and deeply when the blood is flowing.

Since, however, in by far the greater number of cases venesection has an unfavourable effect upon the main disease by increasing the danger from exhaustion and impoverishment of the blood, we should not be led astray by these striking instantaneous results, so as to bleed without necessity; that is to say, unless life be threatened. Should œdema threaten in the course of disease of the heart, immediate danger to life may demand a diminution of the volume of the blood, and the relief consequent on venesection is usually beneficial.

The blood of persons of long-standing disease of the heart is poor in fibrin and albumen, and has great tendency to form serous transudations. Venesection renders it thinner, and, therefore, bleeding should never be used in these cases but under the most pressing necessity.

Blood-letting should never be used in the hyperæmia of asthenic fever, no matter how great, and though the œdema threaten life.

In endocarditis, as a rule, bleeding is decidedly injurious; still a condition sometimes exists where the indication as to symptoms calls for venesection. In cases where overcharge of the pulmonary circulation imperils life by threatening œdema of the lungs, and demands prompt relief by diminution of the volume of the blood. A great acceleration of the pulse and signs of feebleness, however, in the action of the heart indicate the administration of digitalis. Should palsy of the heart threaten, give stimulants boldly.

If, gentlemen, this imperfect and very limited survey of our store of wealth in knowledge be in any way correct, the question may well be asked, How is it that some persons prosper, ride in splendid equipages, and become rich, who regard none of these things?

The longer one lives, the more proof there is that he possesses many of the prominent faculties of the untutored savage within him, and there is no one perhaps more predominant than that of credulity associated with whatever else he may possess. A small proportion only of the human race exercise thought, and really seek after truth. The confidence, sympathy, and support of this class may be anticipated by all right-minded and hard-working men: whereas the majority by far are too much occupied in many ways to regard physical science and

really to appreciate and to think on subjects of this character. The innate credulity of his nature breaks forth, becomes clamorous, and must be fed: to such a person, the truth would be no more acceptable than the doctrines of the Temperance Society would be to a spirit-drinker, because it would cripple and fetter the exercise of the darling faculty of credulity.

To this majority, however, in all ages, have sprung up men willing to gratify their tastes, and such men are often rewarded, from the Holloways downwards, by a short cut to practice and reputation, and they become rich; but do you know any instance where men of this kind have contributed anything whatsoever to physical science? Therefore, to persevere in the love and search of truth, despite the many temptations, to deviate from the straight and narrow path, we must be prepared by God's help to sacrifice self, and, if need be, fall short of the wealth which the charlatan possesses, with a noble consciousness, however, that we are doing our best, not for self only, but for the extension of science, and, therefore, for our fellow-creatures.

THE COMPARATIVE BIRTH-RATE AND NUMBER OF CONCEPTIONS IN CANTERBURY AT DIFFERENT PERIODS OF THE YEAR.

By GEORGE RIGDEN, M.R.C.S.,
Surgeon to the Canterbury Dispensary.

It is probable that many obstetric practitioners have imagined, and yet have doubted, whether human births are more numerous at certain periods of the year than at others; but have been unable, from their individual experience, to come to a satisfactory decision. Nor can a much nearer approach to a satisfactory result be obtained from a perusal of the authorised register of births; for it will be found that, although a few births are registered within a week or two after their occurrence, many are not registered until after a delay of several weeks, and some not until after several months; consequently, the births of January are very frequently registered among those of February, March, April, May, and even June; and a recent registration act, with the laudable desire of preventing any births from remaining unregistered, allows, under some conditions, births to be registered at any period within a year of their occurrence. For many years, however, during which I paid considerable attention to the vital statistics of Canterbury, as a means of improving the sanitary condition of its inhabitants, I was under the necessity of reducing the births as well as the deaths into their order of daily occurrence; and am consequently enabled, at the request of Dr. Farr, of the Registrar-General's office, who informs me that he does not know of such another record, to prove the actual numbers at different periods of the year. I may observe that, during the twenty years from 1854 to 1873 inclusive, there occurred and were registered in the city of Canterbury 12,172 births; viz., 6,242 male births and 5,930 females, the average annual birth-rate being 33.33 per 1,000 of the average population. There was found, however, as the following table will prove, an excess of more than five per 1,000 in some months as compared with others; the month of December being the most prolific month, having an average birth-rate of 35.65 per 1,000, while the average birth-rate in June was only 30.27 per 1,000. There was also, as may be observed in the table, a considerable difference in the average birth-rate of several other months.

CANTERBURY.—Average Daily Number of Births in each Month in the Twenty Years 1854 to 1873.

[Note.—These are daily births in twenty years, and twenty times the actual daily births.]

Months of Conception.	Months of Birth.	Average daily Numbers.	Months of Conception.	Months of Birth.	Average daily Numbers.
April	January	34.84	October	July	32.71
May	February	35.33	November ..	August	30.58
June	March	33.45	December ..	September ..	34.97
July	April	32.80	January	October	34.10
August	May	32.23	February	November	33.70
September ..	June	30.27	March	December	35.65
March, April, and May ..	Dec., Jan., and Feb.	35.27	Sept., Oct., & Nov.	June, July, & August	31.19
June, July, and August ..	March, April, and May ..	32.83	Dec., Jan., & Feb.	Sept., Oct., & Nov.	34.06

By dividing the year into the different seasons—of spring, including the months of March, April, and May; summer, including June, July, and August; autumn, including September, October, and November; and winter, including December, January, and February—it was ascertained that the highest birth-rate—viz., 35.27—was in the winter season; the next greatest birth-rate—viz., 34.06—was in the autumn season; next (32.83), in the spring season; and the lowest birth-rate was in the months of June, July, and August. And it may further be noted that, although the total number of male births, as is generally observed throughout the kingdom, exceeded the total number of female births, this excess was considerably in excess in the least prolific months, while there was an excess of females in the most prolific months. It is evident, however, that the number of births must be dependent upon the number of antecedent conceptions; therefore, if we assume that conceptions took place within a week after the menstrual period of two hundred and eighty days previously to the births, we shall be able, within a very little, to calculate when the greater number of conceptions happened. And, following out our table, it will be evident that the greatest number, viz., 35.27 per 1,000 inhabitants in Canterbury, was during the spring months; the next greatest number, viz., 34.06, was in the winter months; the third greatest number, viz., 32.83, in the summer months; and the least number, viz., 31.19, in the autumnal months of September, October, and November.

It may be suggested that probably the excess of marriages at some periods of the year would influence the birth-rate, particularly of first children, at nine or ten months subsequently; but from inquiries I have made of the registrars of marriages in this city, it appears that the excess of marriages takes place during the months of October, November, and December, and the least number of marriages at periods of nine calendar months antecedent to the excess of births. It is, therefore, difficult to account for the excess of conceptions in the months of March, April, and May, unless we assume, as is very probable, an excess of animal as well as vegetable vigour during these months; but why there should be an excess of females during the most prolific months, it is not easy to conjecture.

HYDATID DISEASE:

AS ILLUSTRATED BY SPECIMENS CONTAINED IN THE PATHOLOGICAL MUSEUMS OF THE METROPOLIS AND IN OTHERS ELSEWHERE.

By T. SPENCER COBBOLD, M.D., F.R.S., F.L.S.,
Correspondent of the Academy of Sciences of Philadelphia.

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ONE of the most valuable contributions to our knowledge of the prevalence of hydatid disease affecting animals is that supplied by Dr. Cleghorn, from a statistical table constructed by the executive commissariat officer stationed at Mooltan. The record in question shows that out of 2,109 slaughtered animals, no fewer than 899 were affected with hydatid disease. This is equal to more than 42 per cent. In the majority of cases, both the lungs and liver were affected. Cysts were found 829 times in the liver and 726 times in the lungs. In a few instances they were present in the kidneys, and also occasionally in the spleen. The inference from all this is, that in India, if not elsewhere, the echinococcus disease is much less common in man than it is in animals. The explanation is simple enough, since cattle have more ready access to, and less scruple in partaking of, filthy water in which the germs or eggs of the *Tenia echinococcus* abound.

Those who have taken the trouble to peruse the foregoing data (giving a *résumé* of the wealth of our museums) will naturally desire to know whether these facts, taken along with others elsewhere obtained, afford us any assistance in determining the amount of injury that we, as a people, sustain either directly or indirectly from hydatids. On carefully reviewing all the facts that I have been able to gather, I may say that it is difficult to draw any very precise conclusions; albeit, it is not mere guess-work when I express the belief that in the United Kingdom alone several hundred human deaths occur annually from this cause. In many other countries the proportion is far greater; the oft-quoted case of Iceland, where the disorder is fatally endemic, still standing at the head of the afflicted territories.

Our Australian colonies are probably entitled to the next place of distinction in this respect. We have strong and recent evidence of the truth of this statement. Thus a writer in the *Australian Medical and Surgical Review* says, "This disease is becoming unpleasantly frequent, and at present we have no reliable mode of treatment, either theoretical or empirical". Another writer observes (*Melbourne Argus*, May