Whisky S.			Whisky A.			Whisky C.			Absolute Alcohol.		
Time.	Pressure.	Pulse.	Time.	Pressure.	Pulse.	Time.	Pressure.	Pulse.	Time.	Pressure.	Pulse.
12 50	105	68	11.48	92	53	4.50	—	63	4.20	106	80
12 55	104	68	11 55	92	56	4.53	102	—	4.26	104	73
1.0	104	67	11.58	92	56	4.55	—	64	4.35	104	79
1.2	2 oz. + 2 oz. water		12.2	2 oz. + 2 oz. water		4.58	102	—	4.36	1 oz. + 3 oz. water.	
1.5	98	63	12.6	96	62	5.0	2 oz. + 2 oz. water		4.42	104	80
1.10	102	67	12 12	94	60	5.4	106	65	4.45	104	80
1.22	106	68	12 19	94	60	5.12	104	60	4.53	102	76
1.25	104	67	12.25	92	58	5.20	100	58	5.0	100	73
1.32	102	62	12.33	94	62†	5.27	102	60	5.7	93	76
1.39	104	65	12.40	92	55	5.35	102	60	5.12	102	78
1.45	104	61	12.46	92	58	5.42	104	53	5.23	100	76
1.50	103	63	12 54	94	57	5.47	102	53	5.29	100	74
—	—	—	—	—	—	5.57	102	58	5.42	102	73
—	—	—	—	—	—	6.3	102	62	—	—	—

* Sleepy.

† Spoke.

The whiskies tested were guaranteed samples of their particular brands. Whisky S was a pure malt pot-still whisky. Whisky A was a pure uncoloured patent-still whisky. Whisky C was also a pure patent-still product, but coloured. The two patent-still whiskies were amongst those which are most in demand. The alcoholic content of these various whiskies was respectively: S, 47 per cent. by volume; A, 58 per cent. by volume; C, 48 per cent. by volume; absolute alcohol, 93-93 per cent. For purposes of experiment we regarded, from these figures, 2 oz. of whisky as equal to 1 oz. of absolute alcohol.

between the action of absolute alcohol and the whiskies examined. In other words, the action of whisky on the pulse and pressure depends upon its alcoholic content and not upon any special body distilled over either in the process employed in the manufacture of pot-still whisky or in that used in the preparation of the patent-still whisky.

We performed a limited number of experiments of a similar comparative type on patients suffering from pneumonia, the classical instance of a disease in which alcohol

to a slight increase in length of action of alcohol than to any essential difference in effect from that produced on the normal circulatory system.

Finally, an attempt was made by intravenous injection in rabbits to detect any difference in action of these various alcohols on the blood pressure measured at the carotid artery. Here, again, no distinct difference could be observed.

In conclusion, we wish to offer Dr. R. May our best thanks for his assistance in this investigation.

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¹ *Archiv. de Pharmacodyn. et de Thérap.*, xv, 1903, p. 443. ² *BRITISH MEDICAL JOURNAL*, 1906, ii, p. 1463. ³ *Fock, Münch. med. Woch.*, 1906, No. 44.

CALCIUM SALTS IN THE TREATMENT OF CERTAIN TYPES OF PNEUMONIA.

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As we appear to be in danger of a boom in calcium salts in the treatment of pneumonia, and as, in my opinion, the withholding of them in certain types of cases may be quite as important as their administration in other types, I venture to give a short account of two cases of pneumonia treated by me in April, 1903. The types of the two cases, or perhaps it would be more accurate to say, the two soils in which the disease grew, were in marked contrast.

CASE I.—The Haemorrhagic Type.

A married woman, aged 38, of stout build, had pneumonia of the right base, and on the evening of the fourth day of the disease her chances of recovery appeared to be small. She could only breathe when propped up high with pillows; respirations were shallow and 42 to the minute; she was cyanosed; had an almost incessant cough and was expectorating a large quantity of watery, haemorrhagic sputum (upwards of one pint in 24 hours); she was vomiting after medicine and food; her temperature was 102.4°; her pulse was small, of low tension and 122; her urine contained albumen; she was obviously becoming weaker.

The drugs that had been administered to her were ammonia, digitalis, strychnine, and brandy; her diet had consisted of milk, beef-tea, meat extracts, etc.

The picture that the woman presented to my mind was that of one drowning in her own excretions rather than that of one dying from a toxæmia. She was of the hydraemic type, and I considered her condition to be due to an insufficiency in the coagulability of the blood. Reasoning upon these lines, I observed the effect of the next dose of brandy upon her, when, as I noticed an increased difficulty in respiration and an increase of the sputum shortly after its administration, I felt confirmed in my opinion, and altered my previous treatment. The diet was restricted to milk, at first by the rectum, and afterwards by the mouth. The brandy and the other drugs were stopped, and she was given 20 grains of calcium

Composite charts for whiskies C.S.A. and absolute alcohol Time in minutes; pressure taken by Gärtner's tonometer; pulse — pressure —

is exhibited for its stimulating action. A recent German writer⁴ has emphasized the fact that most clinicians in Germany who use the drug for its stimulating action have no clear conception of the guiding principles underlying its use. Probably no better rule is available than the old dictum that so long as alcohol reduces the pulse-rate, steadies the heart, and increases its tone, the drug is doing good. Incidentally we may point out that in cases of great cardiac embarrassment we did not find any reduction in pressure. Our observations in pneumonia, as far as they go, under these conditions would seem to point rather

chloride in water by the mouth. The calcium chloride was retained, and was continued in 10-grain doses each hour for the first twelve hours, and then reduced to every four hours. Her condition next day (twelve hours after the first dose of calcium chloride) showed considerable improvement. The frequency of pulse and respirations was about the same, 126 and 40, but she had lost the cyanosis and was breathing easier and deeper, and the tension of the pulse had improved; vomiting had ceased, and the temperature was 101° . The greatest improvement was in the sputum. Its quantity was reduced by about one-half. It was thicker, and its bright haemorrhagic appearance had become a dull rusty tint.

After this the disease ran a normal course; the temperature never went above 101° , and the case terminated by a not very well-marked crisis beginning in the evening of the seventh day.

CASE II.—The Dry Type.

A tall, slight, unmarried woman, aged 25, a *masseuse* by occupation, had double basic pneumonia commencing in the left lung and followed a few days afterwards by involvement of the right lung. Through the whole attack the disease ran a dry course. The physical signs were those of consolidation, the percussion note being markedly board-like in character until resolution took place by way of the lymphatics. There was practically no cough, and there was no sputum. The general condition of the woman was good throughout the attack; her temperature never went above 101° ; she had no difficulty in respiration, its highest recorded rate was 28; the highest pulse-rate was 84. It was not until the fourth day, when the right lobe became involved, that, owing to the second cardiac sound becoming accentuated, ammonia, strychnine, and brandy were administered.

In this case, fearing thrombosis, the aim of my treatment was to decrease, or at least prevent any further increase in, the coagulability of the blood. For diet she was given soups, meat extracts, jellies, bread and butter, tea; she was allowed fruit, and was encouraged to drink fresh lemon juice in water to quench thirst. Milk in any form was denied. Medicinally, except for the ammonia, strychnine, and brandy after the fourth day, she had nothing but potassium citrate.

There was a crisis on the eighth day, the temperature dropping to 99.2° , where it remained for a couple more days, owing, no doubt, to a mild attack of follicular tonsillitis which followed the pneumonia.

In Case I I consider the benefit of the calcium chloride was due to its action upon the blood. By increasing its coagulability, the serous haemorrhage was lessened, and more space thereby given for respiration and the elimination of CO_2 . The reduced temperature and the improved blood tension were due, in my opinion, to the same cause. Beyond these effects the calcium salt had no influence upon the course of the pneumonia itself, which ran on to its natural termination.

In Case II the woman did not get any thrombosis, but whether she would have done so if treated with a milk diet and calcium salts, of course it is impossible to say. Anyhow I saw no reason for the administration of calcium, and one reason against it.

There were two other points of interest in the above cases. Case I had had several attacks of urticaria, and Case II had been in the habit for the three or four years preceding her illness of drinking a pint of milk every day. This latter fact does not conform to the opinion that the long-continued administration of calcium delays the coagulability of the blood. My regret is that I made no exact experiments as to the coagulability of the blood in the two cases at the time.

Judging from the light of further experience, I think that until the time arrives when we shall be able to administer a suitable antitropine, our treatment of

pneumonia must remain symptomatic; its object being, if one may so express it, to keep the patients alive until Nature has cured the disease. In the symptomatic treatment of pneumonia, calcium is a valuable drug in the haemorrhagic type of cases; but in the dry type of cases personally I should fear to use it, and, as it is in this type we more often fear death from toxæmia, it is, in my opinion, more rational to prescribe citrate of sodium or potassium, owing to their power of increasing the alkalinity as well as the fluidity of the blood. In the type of cases where heart failure is feared, unless there is a special call for calcium, I consider that there are other drugs of more value.

NEW METHOD OF ISOLATING THE BACILLUS TYPHOSUS FROM INFECTED WATER.

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A FULL account of the methods used to isolate the *Bacillus typhosus* from infected water is given in a paper by H. S. Willson in the *Journal of Hygiene*, October, 1905.

Therefore I do not propose to compare them systematically with the method about to be described; suffice it to say that most of them have been tried in this laboratory, and have not given satisfactory results. This criticism applies especially to the various precipitation methods, Hoffmann and Ficker's enrichment method being far superior to any of them.

Apparatus for Evaporation.

The principle of the method here in question is to evaporate water under reduced pressure. The accompanying sketch shows how the evaporation is accomplished.

A is a water bath maintained at 37° to 40° C. This temperature can be easily obtained by regulating the height of the flame of the Bunsen burner. No special gas regulator is required, though Reichert's may be used with advantage. In the bath are two Winchester quart bottles containing the water to be examined. Rubber corks fit into the necks of these bottles and should be so shaped that they will not be driven in when the pressure in the interior of the bottle is reduced. These corks are perforated by glass tubes which project into the interior of the bottles. The surface of the water should be at least 4 in. from the end of these tubes, so as to prevent the water bubbling into them when it begins to boil. These tubes are bent at an angle immediately above the top of the corks. The advantage of an acute bend is that the condensed water finds a suitable gradient towards the worm of the condenser B, with which the tubes are connected by means of a T-shaped glass junction and rubber pressure tubing. Through the glass vessel surrounding the worm there is a continual flow of cold water, entering by the pipe *a* and leaving by the pipe *b*. The worm is connected with a large bottle C, which is also connected with a water filter pump D, which is secured to a pipe *p* coming from the main by means of stout tubing braced with cloth, cord and wire. By this means a partial vacuum is obtained in the bottles and the water readily boils at 37° C. The vapour readily condenses and the distillate is collected in C. It requires twenty-one to twenty-two hours to evaporate a litre of water.

After starting the process it needs no further attention till the end is almost reached, when one should be at hand to stop it at the proper moment.

One filter pump can only deal efficiently with one or two bottles, if more are connected up with it the distillation process is proportionately slowed.