can be no doubt that in a more perfect world than ours corporal punishment, whether for man or beast, might be uncalled for. And there is no doubt that as civilization progresses the occasions on which corporal punishment is an effective punishment diminish in number. But it is unlikely that all his readers will agree with Mr. Salt that now is the time to abolish it.

Personal Health; a Doctor Book for Discriminating People,⁹ gives an up-to-date account of domestic medical treatment written by an author who has conducted a daily "Health Talk" department in the American press, and holds that personal health is a subject that is sadly neglected in the popular literature of the day. The book is written in chatty style, and appears to cover the ground adequately.

*Whitaker's Almanack*¹⁰ for 1917 contains the usual mass of information we are accustomed to find in it, but it reflects the preoccupation of the country in several special articles. There is one on the Ministry of Munitions, and the history of the war—both naval and military—is continued. There are also articles on the financial side of the war, on British imports and enemy trade, on labour and the war, on aeronautics, and a series of signed articles on British industries, beginning with applied photography and ending with wool. The influence of the war is reflected also in the increased space given to lists of honours and distinctions. Here we suggest that the colours of ribbons should in every case be given. Owing to the rise in the cost of production, it has been found necessary to raise the price of the volume.

⁹ *Personal Health; a Doctor Book for Discriminating People*. By W. Brady, M.D., Elmira, New York. Philadelphia and London: W. B. Saunders Co. 1916. (Post 8vo, pp. 407. 6s. 6d. net.)

¹⁰ *Whitaker's Almanack for 1917*. By J. Whitaker, F.S.A. London. 1917. (3s. 6d. net.)

MEDICAL AND SURGICAL APPLIANCES.

Steam Disinfection.

THE Grampian Engineering Company, Limited, of Stirling, have issued a pamphlet on steam disinfection, in which they describe their "Velox" high-pressure steam system for treating such articles as bedding, mattresses, curtains, carpets, clothing, and textiles generally. The articles to be disinfected are placed in a wire cage, which is run upon rails into a galvanized chamber. Steam is then admitted to this chamber from the generator, first passing through a saturating drum, and at a pressure of about 15 lb. to the square inch twenty minutes' treatment is said to be sufficient for the effective penetration even of bulky and voluminous goods. For finer fabrics and for leather and rubber goods which would be injured by the high temperatures necessary, a combined high pressure steam and vacuum-formalin system is provided, and by drawing in formalin solution, the penetration is said to be effective at a temperature of about 170° F., some 80° below the range of temperatures in the purely high-pressure system. The pamphlet includes particulars of some tests carried out by Dr. J. Howard-Jones, M.O.H. Newport, which were undertaken with a view to ascertaining the effects of high-pressure steam disinfection on the materials themselves and its efficiency as a means of preventing the growth of micro-organisms. In both respects the results of the tests were satisfactory.

MOTOR NOTES FOR MEDICAL MEN.

By H. MASSAC BUIST.

THE FUEL SITUATION: TO-DAY AND TO-MORROW.

THE action of the Petrol Control Committee in intimating that fresh licences will not be issued to private car owners on the expiry of the current series at the end of April is one of direct, though not gloomy, interest to the medical profession. The situation that occasions the decision consists of the abnormal increase in the demand for petrol not merely for waging the war, but also for industrial and, now, for agricultural service being offset by the new style of submarine warfare, which, whether it proves easy and quick or difficult and long to suppress, is, in any case, quite a different form of enterprise from the submarining which the enemy had in mind when making somewhat similar threats in 1916 and on the threshold of 1915. The 1917 variety is submarining not merely in the areas patrolled by the British fleet in force, and particularly in the North Sea and the Mediterranean, but practically in the seven seas outside them, and especially all over the North and South Atlantic. Fortunately this new

phase of the campaign, embracing war on neutrality, finds us with an absolutely unprecedented quantity of petrol in these islands, despite the fact that there has never been a moment's relief in the rate of expending it on war and industrial purposes. Nevertheless it would be suicidal for the Government to reckon on our sustaining no losses of tank vessels as a result of the new submarine campaign. Doubtless the enemy will destroy a portion of these. The extra shipbuilding during the last twelve months has been admirable; but, in any case, it is sufficient only to keep up with our increasing demand for motor fuel. Further, fresh building from now onwards cannot be expected to overtake the increasing demand, for it is impossible to foresee the limits of that demand. The only certain fact in connexion with it is that, under every head, from ordinary transport to the marine and aerial war services, as well as for industrial and agricultural uses, this nation's demands for motor fuel are sure to be increasing as long as the campaign lasts.

NO CAUSE FOR ALARM.

Inasmuch as the agricultural demand practically constitutes a new factor in 1917, and one of the most vital importance, obviously the Petrol Control Committee—which put the general public on almost impracticably short rations during the first licensing term for a period of three months last summer and autumn, and which revealed its goodwill in doubling the amount of rations for the second licensing period, that now current, for a term of six months—would not be justified in allowing that increased rate of motor fuel to any and all applicants from the end of April onwards. On the contrary, it has no option but to see to it that the use of motor fuel is confined wholly to work of national importance. It will be observed that, while it is plain that no more petrol is to be granted to private users, nevertheless it is made abundantly clear that if petrol is needed in connexion with work of national importance licences will be issued. We know the Government has always recognized the work of the medical profession as being of national importance. That recognition is being more fully accorded as time passes and doctors become more and more scarce. Hence there is no cause for alarm among the ranks of the medical profession.

GOVERNING FACTORS.

It may be taken for granted that between now and the expiry of the current petrol licences the Petrol Control Committee, which is to review the whole scheme of allowances, will be able to arrange for medical men to have supplies, possibly somewhat restricted, but still sufficient for the work of the average practitioner. Commercial vehicle users will certainly be allowed less.

By the time the fresh series of licences is due to be issued we shall have had eleven weeks' experience of the new style German submarining campaign. That will be amply sufficient to enable us to form an accurate estimate of the effect it will exercise on our conduct of the war. Of course the talk in the German press that the Teutonic public must not expect immediate results is all nonsense, since the worst damage in connexion with enterprises of this sort is, naturally, done in their earliest stages, because it is impossible to foresee every detail of the enemy's schemes and to make adequate provision against it.

Apart from this, the additional steps the British authorities are taking to deal with the menace must of course bear more and more fruit with the lapse of every week. Hence, to an extent, to-day we are in doubt as to what the new style submarining menace will mean in practice, whereas we shall have no doubt on the subject at the end of April. Most likely by then we shall have realized that the situation will neither be hopeless nor negligible, but that a certain average of loss will have to be reckoned on for a more or less indefinite period, an average which will influence private car owners whose work is of national importance, done with the aid of their cars, as notably medical men, who will therefore continue to receive petrol rations modified, if at all, to a slight degree.

In the meantime nobody can foretell in terms of gallons what will be the allowance to the individual medical man. Even if the Petrol Control Committee were to arrive at a decision to-day it would be of no value, because ten weeks hence, when the time came to put the matter in practice, the licensing situation, whether more or less favourable, would certainly be different.

This, too, must be had in mind in connexion with the Petrol Committee's work: that it has not made the mistake made by many other supplies controlling committees, here or in enemy country, of issuing licences for what is not obtainable. To date, motorists have always been able to purchase the petrol which their licences entitle them to buy, though a retailer here or there may be temporarily out of stock. There is reason to believe, moreover, that that policy will be pursued by the Committee as long as it is necessary for it to continue its work.

THE SPARE PARTS PROBLEM.

A correspondent who has been reading about the spare parts difficulty mentions that he intimated to the manufacturers of his car that he was sending his motorman to inquire about getting spare parts; they replied that they would not be able to supply him with any spare parts unless he specified exactly what would be required, as they could not say what parts would be wanted, were only working from hand to mouth, and had no bulk of goods to send out. This firm, therefore, will not deplete its stock of spare parts, a policy it is entitled to adopt if it pleases, and apparently it is not able to supply spare parts from stock, but is steadily driven to making them from hand to mouth. Therefore it does not come strictly under the category of those concerned with stocks of spare parts. Obviously, it is quite impossible to deal with the position of individual firms throughout the country. What one can do only is to deal with the situation generally. That has been done in these notes for months past. Furthermore, in the interval since the matter was first mentioned in these columns spare parts supplies have, of course, been drawn on almost continuously by all classes of users. Hence the present situation is that, certainly in the majority of cases, stocks are not available for drawing on, particularly at random. Whether a given manufacturer knows, or does not know, what parts are likely to be needed for spares, of course, depends entirely on the length of time the given model has been in use and the quantities in which it has been produced since. It is from such experiences only that the average can be ascertained. Moreover, inasmuch as the stripping of cars for examination is in some cases quite a profitable enterprise, certain firms are not willing to give advice as to what spare parts are needed without themselves examining the car and charging the usual fee for the stripping and re-assembling operations. For the rest, the only advice that can be given is that which was printed in these columns quite recently—namely, that such parts as the bevel or worm of the back axle; possibly the second or third speed of the gearbox; perhaps the steering segment, or piston rings, are the sorts of parts that are most likely to wear out first in an ordinary car properly treated. Wear is usually gradual, hence often the given part gives notice of the fact, as by slackness or noise. Then it is as well to replace it for fear of a breakage. These are the only hints which are at all applicable in a general way. For the rest, I gravely doubt if at this time any maker has a stock of spare parts for supply offhand.

VOLUNTARY RESTRICTION OF DIET.

It is reported unofficially that the information reaching the Food Controller's department justifies the belief that housekeepers are making an effort to restrict domestic consumption of bread, meat, and sugar to the amounts recommended, that is to say, 4 lb. bread, 2½ lb. meat, and ¾ lb. sugar, weekly per head. It is said also that the reports as to panic buying by housekeepers to form hoards of non-perishable provisions have been exaggerated, and certainly there does not seem to be in present circumstances any need for panic.

We have been at the pains to estimate the value of the food supplied to three middle-class families during the present winter, and before Lord Devonport's appeal for restriction was made. The families consisted of 16 persons—3 men (sedentary), 9 women, and 4 children—and save for a certain amount of economy in buying, due to the increase in prices, and to a considerable diminution in the amount of sugar owing to the difficulty in obtaining it, there was no very noticeable alteration in the standard of living. The Committee of the Royal Society came to the conclusion, after a full consideration of

the dietary requirements of a nation for the most part engaged in active work, that they could not be met satisfactorily on a less supply in the food, as purchased, than 100 grams protein, 100 grams fat, and 500 grams carbohydrate, equal approximately to 3,400 calories per "man" per day, a "man" being an average workman doing an average day's work. Generally speaking, however, a woman or child requires less food than a man—that is, has a man-value less than unity. To convert the population of men, women, and children into units, or "men" as defined above, the total number must be reduced by 23 per cent. In reckoning diet, 100 men, women, and children equal 77 units or "men." The quantity of foodstuffs available during the period 1909-13 yielded:

	Protein.	Fat.	Carbo- hydrates.	Calories.
Per head ...	Grams. 87	Grams. 100	Grams. 440	3,091
Per man ...	113	130	571	4,009

According to the analysis made of the diet of the three families mentioned, the amount of protein and fat consumed was in excess of requirements, the amount of carbohydrate rather lower than the standard taken by the Committee, and the yield in calories considerably lower per head. The nutritive value of the fresh vegetables and the very small quantity of fish used were so small that they have not been taken into account.

Diet before Voluntary Restriction of Three Middle-class Families (16 Persons).

	Weekly Weight in Ounces.	Daily Yield in Grams.			Energy Value in Calories.
		Protein.	Fat.	Carbo- hydrate.	
Meat, sausages, bacon	50.5	23.8	52.4	1.1	663
Bread	58.0	18.7	2.8	123.1	580
Sugar	8.9	—	—	35.3	145
Totals	117.4	47.5	55.2	159.5	1388
Cheese	4.0	4.5	4.9	0.4	63.4
Butter, etc. ...	13.2	0.5	45.3	—	424.0
Potatoes... ..	32.0	2.27	0.13	27.2	122.0
Flour and oatmeal ...	7.0	16.2	2.3	21.3	103.0
Rice, lentils, etc. ...	11.6	1.6	0.7	24.3	270.0
Jam and dried fruits	3.8	3.7	0.2	8.7	37.8
Totals	71.6	28.77	53.53	81.9	1020.2
Total ration of re- stricted articles	—	47.5	55.2	159.5	1388
Total of extras ...	—	28.77	53.53	81.9	1020.2
		76.27	108.73	241.4	2408.2

The fallacy in this analysis is that it leaves out of account midday restaurant meals taken by three adult males. In Dr. Leonard Hill's report to the Health of Munition Workers Committee on an investigation of workers' food he gives an analysis of twelve canteen meals, from which it appears that they afforded on an average protein 42.43, fat 36.7, carbohydrate 146.9 grams, yielding 1,114 calories. To get the average effect of this addition it would appear that we may add to the totals in the table protein 8, fat 7, carbohydrate 27.5 grams, and calories 209, giving total values for the three households per head of protein 84.27, fat 115.73, carbohydrate 268.9 grams, yielding energy value in calories per head of 2617.2. As a set off a certain allowance ought to be made for meals given in the homes to occasional workers, but probably the effect of any such deduction on the figures here given would be very small. So far as our examination goes, therefore, it appears that the members of the middle-class families as to whom the inquiry was made received rather less protein, rather more fat, and considerably less carbohydrate than the standard per head of the whole population, and that the yield in calories was about 15 per cent. less (waste being neglected).