"hop" he stepped off on his right foot and as he landed he felt the right knee-cap give way. At the moment the left foot touched the ground the left patella also gave. At the time the accident occurred he heard "two cracks," one immediately after the other, and the sound he likened to the breaking of pieces of "dry wood." This occurred before either knee touched the ground.

The soil was soft sand, and there were no stones to fall on as the track had been specially prepared.

He had no pain immediately after the accident, but could not rise from the ground.

The clinical picture was the usual one found in such a condition, with considerable interval between the fragments. There is no family or previous history of bone disease, and patient is a healthy muscular man with large frame.

X-ray examination showed left side simple transverse fracture.

Right side, a three-fragment fracture.

Treatment.—Transverse wiring.

Unusual points which justify record:

(1) Almost simultaneous bilateral fractures by indirect violence.

(2) On one side the fracture was multiple.

Translation.

COMMUNICATION ON THE INTRODUCTION OF A REGULATED AMOUNT OF WINE INTO THE SOLDIER'S RATION.

By M. E. MAUREL.

Correspondant National.

The Academy has already had three communications on this subject. At the sitting of June 29, 1915, my colleague, M. E. Vidal, has, with his habitual ardour, advocated once more the importance of this step as a preventive of alcoholism; and M. Armand Gautier, who had already broached the subject before the Academy of Science on February 1, 1915, took up the matter again in his masterly manner before our Academy at the sitting of July 6, 1915. But, as he already had done at the Academy of Science, he further has enlarged the question by the

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1 Translated from Bulletin de l'Académie de Médecine No. 31, Séance au 3 août, 1915.
2 La ration du vin aux soldats dans ses rapports avec l'alcoolisme (Séance du 29 juin, 1915, p. 784).
3 Dététique : sur la ration du soldat en temps de guerre, t. clxix, 1 février, 1915.
4 Dans la ration actuelle du soldat, il faut diminuer la viande et augmenter les légumes et le vin (Séance du 6 juillet, 1915, p. 5).
addition of some valuable observations on the ration as a whole. The title which he has chosen for his paper sums up very aptly the ideas which inspired him. Finally, at the sitting of July 13, 1915, M. Landouzy taking up this to him familiar question of food allowance and applying it to troops, has demonstrated, inter alia, the desirability of replacing a certain amount of meat by wine, and also of varying the ration according to the build (of the soldier).

I am anxious to associate myself entirely with the conclusions of my colleagues. With M. Vidal, and for the same reasons, I agree that the moderate use of wine is a means of diminishing alcoholism, and with M. Gautier, I consider that the soldier's ration is too rich in meat, too deficient in vegetables, and stands to be improved by the addition of wine. Finally, I accept M. Landouzy's views on the variation in ration according to build and in the substitution of wine for a certain quantity of meat.

It is now some time since the rationing of the army, considered broadly, has seemed to me capable of improvement in certain directions—some scientific, others practical.

In 1909 I drew attention to this in dealing with army rationing, and quite recently I returned to the subject before the Scientific and Literary Academy at Toulouse. In this investigation, in addition to some general knowledge acquired on the subject of diet, especially in its relation to physical labour, I have made use of the results of certain experiments carried out by me in the preparation of my essay on "Diet and Sport" and in my investigations regarding expenditure of labour in swimming and cycling.

Perhaps I shall take up this work again for the Academy. For the present I shall limit myself to questions relative to the introduction of wine into the soldier's ration.

In 1909, in approaching the question of table beverages—wine, cider, perry and beer—I first considered them collectively and discussed the four following questions:

1. Are these beverages necessary?
2. Are they useful—or, more precisely, do they constitute foods?
3. Are they dangerous?
4. Under what conditions are they dangerous, and under what conditions may they be safely made use of?

Now, after sifting these questions, I summed up my conclusions as follows:

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1 Levin dans la ration du soldat; moyen de lutte contre l'alcoolisme. (Bulletin de l'Académie de Médecine, 13 juillet, 1915, p. 53.)
2 Des troupes des deux armées.
3 L'Académie des Sciences, Inscriptions et Belles Lettres de Toulouse.
4 Poire.
Regulated amount of Wine in Soldier’s Ration

(1) During a meal the addition of some liquid to the solid foods is practically indispensable.

(2) This need not necessarily be a fermented liquor.

(3) Fermented liquors (taken under conditions now known) constitute true heat-energy-producing foods on account of their contained alcohol, and in this respect may be ranked with the starches and fatty foods.

(4) Under certain known conditions alcohol yields the same heat values in vivo as in the calorimeter.

(5) Under the same conditions, during both sleep and muscular work, alcohol replaces sugars and starches practically isodynamically (isodynamiquement).

(6) In these same conditions alcohol may be taken without danger.

(7) The conditions above referred to are as follows:—

(a) A maximum daily amount of one gramme per kilometre of body weight (about a quarter of an ounce per stone) should not be exceeded.

(b) The alcohol should be taken in a dilution not stronger than 10 per cent.

(c) The amount should be divided, not consumed all at one time.

(d) It is best taken at meals, not on an empty stomach.

(e) If taken between meals, it should be diluted down to 5 per cent or less.

(f) As far as possible it should be taken in the form of wine; or at least those liquors which contain the greatest quantity of noxious bodies, i.e., propyl, butyl and amyl alcohol, should be avoided.

Such were the conclusions I came to in 1909 regarding fermented table beverages in general, or, more accurately, as regards their alcohol content. As concerning French wines particularly, I summed up my conclusions as follows:—

It is the alcohol of medium wines1 which the organism most readily uses up, with heat production equivalent to that of a sugar, to the extent of at least 1 gramme per kilo body weight. Thus for a man of 65 kilos (10 st. 3 lb.) the amount is 65 grammes (2 fluid oz.) or about 1½ pints of wine containing 10 per cent of alcohol by volume.

Subsequent workers have confirmed these conclusions, notably Maignon, Batteh and Stern, Debove, Louis Jacquet, M. Nirloux and Placet, Maurice Nirloux, and Ivanov.

This general conclusion, most important and no less reassuring to our populace, has therefore been put beyond the range of doubt, viz.: That the rich wine products of France, used under conditions fixed by the laws of hygiene, constitute a food of high nutritive value, which is cheap and free from risk.

This result, important as it is to our general population, is equally

1 Vins moyens.
applicable to the army, and it supports the opinions of Messrs. Vidal, A. Gautier, and Landouzy.

In the army the moderate use of wine, as Messrs. Vidal and Landouzy have pointed out, diminishes the risk of alcoholism; moreover, as M. A. Gautier has brought to notice, wine in such proportion has first of all a tonic action, and then constitutes a valuable source of heat and muscular-energy which has, thanks to its facile absorption, the advantage over other elements ternaires of diet of being utilized by the organism very shortly after its ingestion. To these advantages of wine I would add the following:—

(1) That we find it at our doors. (2) That it is cheap.

(1) As it is a product of France we have it at our immediate disposal and we can exercise surveillance over its manufacture. (2) As far as expense is concerned, its introduction into the soldier's ration (as M. Landouzy has already pointed out) so far from increasing the price, actually enables a substantial economy to be effected. It seems to me important to lay stress on this point.

The State can readily obtain from the wine-growers a wine of 10 per cent alcohol strength at 1s. 1½d. per gallon or at least at the rate of 1½d. per gallon per degree of alcohol. At this price threepennyworth of wine will give 700 calories. Now, if as Messrs. A. Gautier and Landouzy insist is necessary, the amount of meat in the soldier's ration is reduced and its place taken by its dynamic equivalent in wine, the State will realize a substantial economy. In eliminating 3½ ounces of boneless meat, giving on average 200 calories, the price of the ration will be lessened by about 2½d. (0 fr. 25). Now wine will give the same number of calories at the cost of about 1d. (0 fr. 10). There will thus be an economy of 1½d. per ration, that is a saving of £12,000 a day where two million men have to be rationed.

Further, this substitution of wine for meat especially in campaigning rations is further justified by the following considerations:—

(1) The expenditure of albuminoids by the average man, even under conditions of considerable physical expenditure is not more than 3½ to 4 ounces (100 to 110 grammes), and in the campaigning ration about 5 ounces (140 grammes) of these bodies are present.

(2) The further expenditure due either to radiation from the skin or to muscular work is covered satisfactorily by the constituents of the ration (ternaire).

(3) Wine in the above proportions has the advantage over other constituents of the ration (ternaire) of being assimilable by the organism very shortly after ingestion.

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1 A 30 francs l'hectolitre, ou du moins du bon vin dont l'alcool serait payé à 3 francs le degré.
2 300 mille francs.
3 43