On Vitamin C in the Green Tea.

By MASATARO MIURA, and MICHIYÔ TSUJIMURA.

The authors observed that green tea has a fairly high antiscorbutic potency, while black tea almost lacks this power. This difference may be considered to be caused by the different processes of manufacture of these teas. In the manufacture of green tea the fresh leaves are withered by steaming, and taken in a low wooden flame with paper bottom over the charcoal fire, spreading and drying by rolling over and over for 2-3 hours, so as to reduce its oxidation and to retain the green color as much as possible. But in the manufacture of black tea the cellular tissues of the fresh leaves are first broken mechanically, and exposed to the direct sun light for some hours and then are fermented at a moderately high temperatures, completely converting green colour into brown on account of oxidation in the process.

As the antiscorbutic potency is most easily destroyed by oxidation at high temperature so it is quite natural that the authors found the potency is nearly absent in black tea.

The method used by the authors is followed to the one which is schemed by the member of the Lister Institute of Preventive Medicine, London. Guinea pigs of 270-330 grammes are fed with the mixture of equal volumes of oats and wheat bran ad libitum, and 40-50 c.c. of the milk autoclaved at 120° for an four per day as the basal diet for twelve days, and then the infusion of the tea to be tested is added into the above foods. The tea is always weighed and extracted with a few c.c. of hot water of 60°-70° for 5-7 minutes whenever the impression is required, and to the freshly prepared infusion a few drops of the autoclaved milk mentioned above is added and the mixture is given to the animals by means of forced feeding. The noxious effects of tannin present are modified by the addition of the milk.

Thus the infusion obtained from one gram of the green tea of last year sold in stores here has been proved completely to prevent the animals from scurvy for more than 60 days, and sometimes no scorbutic sign is shown for 108 days.

It should be kept in mind that the weight of the animals may be decreased when fed with such a substance containing a considerable amount of caffeine.
and tannin besides vitamin C, even the amount of vitamin C given is increased by a more addition of the substance, as the influence of these intermixtures thus be increased, and also the terms of existence of the animals may be shortened. For this reason, the determination of its antiscorbutic value always requires the post mortum examination.

The antiscorbutic potency of the green tea is proved not due to tannin and caffeine, and the experimental results as to the antiscorbutic value of both new and old teas under investigation are shown in the following, provided that all of these contain 4–5% of moisture.

<table>
<thead>
<tr>
<th>Tea Type</th>
<th>Daily Dose</th>
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<tbody>
<tr>
<td>New tea</td>
<td>0.4–0.6 g. per day</td>
</tr>
<tr>
<td>One year stored tea</td>
<td>0.75 „ „ „ „</td>
</tr>
<tr>
<td>Two years „ „</td>
<td>1.00 „ „ „ „</td>
</tr>
<tr>
<td>Four years „ „</td>
<td>negligible „ „ „</td>
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</tbody>
</table>

It is also noticed that even an old tea, in case it has a comparatively high luster and aroma, gives a fairly high potency, and that the potency of the coarse tea (Bān-Chā) though manufactured in this year, is not much significant.

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*Studies on the Colloidal Substances in Alcoholic Beverages with the Interferometer.*

By Teizō Takahashi and Hōbun Ōmachi.

The Löwe’s interferometer was used for the determination of the colloidal substances in alcoholic beverages, especially in various beers and beer worts by Adler and Luers (Zeit f. d. Ges. Brauw. 1916 Nr. 3–Nr. 6.). No consideration was however given as to the relation existing between the so called “Colloid Number” measured by the interferometer and the analytical percentage of the actual colloidal substances present.

The authors investigated how much an accuracy should be obtained with the instrument using very common colloidal substances such as dextrin and peptone, and tried to find a more suitable substance for removing the colloidal substances than animal charcoal using blood charcoal, barium phosphate etc. for the inves-