C.S.

MEDICAL.
(Misc.)

No. 75/36.

193 6.

Hon. S. M. O.

SUBJECT.

193 6.
2nd May.

NOTES ON SANITATION AND GENERAL HEALTH MATTERS IN THE CAMP.

Previous Paper.

MINUTES.

1-36.

Minute from Hon. S. M. O. of 2/5/36.

Y.E. I have read these interesting notes prepared by the Hon. S.M.O. which are submitted for Y.Es instructions.

2. The notes are rather lengthy for publication in the "Penguin" and by publishing them in parts they would loose a lot of their value.

3. It seems therefore that they should be printed in
(a) "Roneo" style
or
(b) Printed by the Gov. Printer.

(a) would perhaps be the quicker method and although (b) would take a week or two to set up the type the result would be more lasting and more attractive to read.

I recommend (b).

4. I suggest that the notes be issued to all farm stations

5. I also recommend that no charge be made - the main idea being to get those concerned to adopt the suggestions.

C.B. Ag. C.S.
25/5/36.

150 copies should be printed as a pamphlet with a suitable title on a stiff cover

25/5 36

Subsequent Paper.

Passed to Govt. Printer 26/5/36

Hon S.M.O.

To note.

C.S.J.
for C.S.
28/5/36

Hon. Col. Sec.

Noted.

His Excellency wishes lines 19–23 on Red 16 to be deleted & substituted by the attached amendment. 37-38.

Proposed title page submitted

1st June 1936

S.M.O

Govt. Printer.

Please print 150 copies of the handbook

J.P. 3/6/36

Noted G. G. Allan
Head Printer

P.A.
3/6/36

Minute from Hon SMO 5/1/37 (38)

A.C.S. What is the position?

M.C.H.
C.S.
5. 1. 37

A.C.S.

Owing to pressure of work and shortage of type it has not been possible for the Printer to do anything in the matter of printing the Handbook.

When printed the Handbook will contain some 50 pages and will take

C.S.O. No. 75/36

Inside Minute Paper.

Sheet No. 1

some time to set up.

at present the Printer has 40 different forms awaiting printing and states that he will be unable to commence the Book for some time unless other work is held up.

C.C.S.
6/1/37.

Hon. S. M. O.

To see. There are many other urgent matters awaiting completion and I fear it will not be possible to get the Handbook done before you sail. I think it should have been sent to the UK for printing. I regret the delay but feel sure you will realize that with limited printing facilities it has been unavoidable.

C.
6.1.37.

Hon. Col. Secretary

Thank you, I fully realize that the printing office is very busy

Would it be possible to send the pamphlet to the U.K. by this mail, as you so kindly suggested

S.M.O.

7—1—37.

The printing office has been unable to make any progress with the printing of this pamphlet and it is doubtful when it can be done.

If forwarded to the lith., the question of cost arises.

MCH
C.
7.1.37

I wish a special effort to be made with the pamphlet overtime being worked if necessary. Will you please let me know the progress in any event

7/1/37

Office — Printer shall commence on this work. MCH
C.
8.1.37

Printer informed.

~~A.J. 21/1/37.~~
~~C.D.D. 21/1/37.~~

A.J. 25/1/37.
C.D.D. 21/1/37.

C.S.O. No. 75/36

*Inside Minute Paper.*

*Sheet No.* 2

Hon. S. to C.

Proof of Landbook Leeewate
for revision please.

MCH
C.S.

25. 1. 37.

Hon. Col. Secretary.

The proof has been corrected & returned to the Printer.

25—1—37.

S.M.O.

~~25/1/37~~
~~25/1/37~~

~~27/2/37.~~
~~27/2/37.~~

P.A
5/2/37.

39-41. Minute from Hon. S.C.O. 10/2/39.

~~Submitted.~~
~~MCH~~
C.S.
~~14/2/39.~~

Hon. S. M. O.

Have you seen the handbook herein red 35 and continuation?

MCH
CS
11. 3. 39.

HCS

Yes. we have a copy in our files.

S MO
13/3/39

---

H.

Reds 39-40 submitted. The handbook (red 35) was sent to Stations in 1936.

MCH
CS
14. 3. 39

41 should certainly issue as proposed. I doubt if red 35 got past the managers

14/3/39

Hon S. M. O.

To note approval.

MCH
CS
14. 3. 39

HCS

Please request the Printer to supply 400 copies of the pamphlet Red 39-40

S MO
15/3/39

A CS.

Can the Printer do this or should it be cyclostyled.

MCH
CS
17. 3. 39.

C.S.O. No. 75/36

Inside Minute Paper.

Sheet No. 3

H.C.S.

I understand the printer is unable to deal with this circular so I have arranged that Mr. Everton Sec. of the Nutrition Board should run them off on the cyclostyle.

Sec. X
S. M.
21/3/39

B. U. when copies have been completed

MEH
23. 3. 39.

Hon. Sec. C.O.

Will you kindly insert a copy of the circular in this No. 8.

RWA
for C.S.
31/3/39.

H.C.S.

Cyclostyled specimen herewith please

Sec. X
31.3.39

(42)

Y/K.

Copy of circular sent by the S. M. O. to Camp Stations Submitted for information. This has been sent to all Camp people.

MEH
C.S.
1. 4. 39.

4. 3.

How on earth can they eat a raw green vegetables every day? Is any raw green vegetable ever eaten here except lettuce and that for a [illegible] period?

3/4/39

45.

Hon. S. M. O.

Please say.

McH
C.S.
3. 4. 39.

H. C. S.

46. ① Kale is, I believe, a vegetable and can be consumed in a raw state every day of the year and in fact is so consumed by me when lettuce is not available.

② I trust this covers the point raised by His Excellency.

S. McS
3.4.39.

Yr.

47. Submitted. A further circular might perhaps be issued explaining that "raw green vegetables" mentioned in the original circular refers more particularly to Kale which can be grown the whole year round and can be used as a salad when other things fail.

McH
C.S.
4. 4. 39.

48. I had not the physical possibility in mind so much as the pabbitical nature of the diet thus thrust on the camp.

N. Z. A.

4/4/39

P. A.

14. Minute from H.E. the Governor of 5.2.54.

No. _____

(It is requested that, in any reference to this minute, the above Number and the date may be quoted).

From S.M.O

# MINUTE.

2nd May 1936 19

To

THE COLONIAL SECRETARY,

Stanley, Falkland Islands.

I beg to submit a pamphlet on Hygiene written according to H.E. the Governor's Minute 21/8/35.

14/4/35

It is primary for the use of Camp Managers & Farm hands, with the hope that the time expended will be of some use to the various isolated communities in the Falkland Islands.

[3 copies enclosed]

T.H. Stevenson

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## SECTION 1.



- - - -

## SECTION 11.

It has been suggested that a few notes on Sanitation and general Health matters might be of interest to Camp Managers and others in responsible positions in the Camp. These notes do not pretend to be exhaustive; they are merely suggestions for the improvement of housing and general health conditions. They have been divided up under various headings for the sake of clarity.

Housing Conditions.

The following suggestions are put forward as embodying ideal housing requirements. As, however, very few buildings need to be built, it is hoped that existing building will be altered, when necessary, to comply as far as possible with these requirements.

(i) Houses.

(a) Dampness. A damp house is a cold, unhealthy house. Some care should be given to the chosing of sites for building. Several camp houses suffer from dampness owing to their proximity to fresh water ponds or to rivers; the subsoil water level is apt to rise and then the walls of the houses act as wicks. Also the atmosphere near fresh water is laden with moisture.

The use of damp courses in houses has not been sufficiently urged; many houses have no barriers to prevent the damp rising up the walls. Stone built houses, which in most respects are very suitable for this climate, have especially suffered from lack of damp courses and fallen into ill-deserved disrepute on account of the dampness which should have been prevented.

The various materials /.

The various materials which might be used for damp courses are:- asphalt, shale, lead, lead in portland cement, tar or bituminous felt. The damp course should be at least six inches above the ground.

A certain amount of dampness could be prevented if the area round the houses were paved with slabs of stone and cement with a slope from the walls to a drain. Even the use of duck-boards round the doors would prevent much dampness and dirt from being brought into the house.

Another very common cause of dampness is the breaking down of gutters, often due to an accumulation of dirt which rots the wood. All gutters require constant overhauling, the gutters being examined, cleaned and repaired. Down pipes from the gutters and the overflow of collecting tanks should be conducted safely away from the foundations of the house.

Dampness may enter through the junction of the chimneys and the roof, or through loose weather boarding. Painting wooden houses and all woodwork at regular intervals, and periodical inspections, go a long way towards keeping the property weather proof and free from dampness.

The causes of dampness are:-

(1) Exposed situations and sites near fresh water.

(2) Wet sub-soil.

(3) Lack of proper damp courses six inches above the ground.

(4) Use of inferior building materials.

(5) Insufficient protection at the tops of walls under the eaves.

(6) Defective eaves, gutters, rain water pipes and chimney joins.

<u>(b) Dry Rot</u>. Dampness, combined with lack of under floor ventilation is the cause of dry rot, a peculiar fungus which is liable to cause chronic ill-health if inhaled into the lungs. Dry rot gives out a peculiar pungent, musty odour; the affected wood is, on the whole, dry and crumbling, but there may be weeping areas.

In past years there has been/

In past years there have been a sad neglect of the principle of ventilation of underfloor areas. Once dry rot sets in it slowly spreads and there is no cure except to make a new floor and to burn the infected wood. The stone-work into which the floor joists are set should be burnt with a blow lamp or washed with corrosive sublimate, formalin or carbolic acid, though the latter only temporally checks the spores. To prevent recurrence of dry rot the ends of the new joists should be painted with tar or creosote and the underground ventilation made more adequate. The ground floor should be at least 3" above ground level.

(c) Ventilation. The custom of keeping windows tightly closed seems to be very prevalent in shepherds' houses. It is not realized that overheated and badly ventilated rooms are a very prevalent cause of colds, bronchitis and consumption, xxx the contrast between the temperature of the living rooms and that of the outside air is very marked.

The proper living room temperature should be 60°.F. To ventilate the room there should be a steady current of air, not exceeding 2-3 ft. per second, or, failing that, the air in the room should be changed 6 times every hour. The change of air in a room is more important than its cubic space per person. Rooms might, with advantage, be aired for two hours every day. These measures would guarantee the removal of vitiated and poluted air and give a comfortable atmosphere of proper temperature and humidity. It has been proved that the discomfort of close, crowded rooms is physical rather than chemical, and is dependent upon heat, humidity and stillness, three factors which must be guarded against if a room is to be healthy for living in.

It has been /

It has been calculated that to ensure proper ventilation every habitable room should have a window area, on an outer wall equal to one tenth of the floor area, and at least one half of the window should open, for preference the top half. The practice of building sash windows that can only open top or bottom is much to be condemned as it does not provide for the circulation of air in a room. Windows hinged at the top also fail to provide for adequate circulation of the air.

In rooms without a fireplace some means of ventilation is desirable, either a flue or a perforated brick having an unobstructed area of 100 square inches.

The cubic space of a room is closely connected with its ventilation. In a sleeping apartment it is desirable to have 40 square feet of floor space for each person over 10 years of age and 30 square feet for each person under 10 years of age. However, should the height of the room be less than 8 feet, the floor space should be increased by $\frac{1}{8}$ for every foot, or part of a foot, that the average height falls short of 8 feet. In measuring the cubic capacity of a room any height above 12 feet may be disregarded.

(ii) Latrines.

For the most part the bucket system is in use in the camp and, with the aid of dry peat mould, $\frac{1}{2}$ a lb. to each user, it is a very effective system provided that the peat mould be thoroughly dry and that the buckets be emptied frequently, at least when xxxxxxxit is two thirds full. Buckets should be cleaned every time they are emptied and rinsed with sheep dip or disinfectant. The extra refinement whereby the peat mould is shot down a shute from a raised deposit is to be encouraged. The buckets should, is possible, be of galvanized iron not more than two cubic feet in capacity; better protection against flies would be afforded if the seats were built of such a height as to be in closer opposition to the bucket. The floor on which the bucket stands should be of cement or galvanized sheet iron

so that it can be /

so that it can be regularly cleaned. It is preferable to have a separate door constructed at the back of the cubicle for the removal of the bucket, rather than to use a hinged flap for the removal of the bucket at the fromt, which is liable to contaminate the room itself and to introduce flies into it.

The excreta may be disposed of by digging into the land, the selected area being trenched 9" deep and the excreta covered with 3" - 4" of earth. Under suitable conditions the same piece of ground may be used again after a lapse of several months. Another method of disposal is by incineration.

In some places pit latrines are used. This form of latrine saves a great deal of labour and is very satisfactory provided that the pit is never within 100 feet of a drinking well, nor above it. The pit should not be less than 8 feet deep with sides sloping away from the opening which should be 3 feet square, and surrounded by cement base upon which is placed the latrine cubicle. When the pit is almost full, within 18" of the top, a new site must be found and the latrine cubicle removed to its new place.

A pit latrine acts through fermentation which destroys the germs and keeps down the odour. This action is assisted by horse manure which should be added whenever the odour becomes offensive. From time to time the contents of the pit should be moistened with a pail of water.

This type of latrine is strongly recommended for cook-houses, especially where it is impossible to build the latrine far enough out over the shore to be cleaned every day. Some of these latrines over the shore only allow for high monthly tides to clean away the filth; such a practice is very bad, and it is strongly advised that the gangways should be extended further out, so that the daily tides can wash away the excreta; In order to prevent the paper blowing about, and to help in breaking up the deposit, a metal basket should be

placed between/

placed between the piles under the latrine cubicle. This would confine the paper until the sea floated it away; the daily tide would break up the solid matter inside the basket and then wash it away.

Another type of latrine is the chemical closet having a container apparatus with a solution of caustic soda and carbolic acid which dissolves and renders innocuous the excrement. The contents are disposed of on the land.

It is essential that all latrine cubicles should be fly proof as well as ventilated, and the use of gauze netting over the ventilators and windows is advised. The latrine cubicle should be adequately ventilated by means of a window which opens and permanent ventilation slats or holes in the door. The floor, which should slope slightly towards the door, should stand 3" above the ground. The seat for adults should be not more than 14" high and should be provided with a wooden lid to fit onto it when not in use.

(iii) Water Supply.

In this country the majority of drinking wells are dependant on sub-soil water and they are therefore more liable to surface contamination than any other type of well. In many cases the wells at shepherds' houses are mere holes in the ground round which animals may feed and cattle have actually been seen drinking at the well itself. It is fortunate that this country appears to be free from typhoid fever; but the persistent gastritis and diarrhoea so common in the summer months are undoubtedly connected with unprotected and badly constructed drinking wells. It has been remarked that several horses are notorious for Thread Worm infestation amongst the children; but it is not always realised that the drinking water may be responsible for this as well as other worm infections, such as Hydatid Disease, Tape Worm and Round Worm.

Unfortunately /

Unfortunately no drills are available for making deep or artisian wells, so inhabitants of the country, for the most, have to be content with surface water. In certain places this water has been partially purified by passing through the subsoil and reappearing on the surface some distance away.

The condition of these surface wells could be made safer by building or altering them in accordance with the following: requirements of a good well are:-

(1) The situation should be at least 100 feet from any source of infection such as sheep, pens or dips, shearing sheds, garden, pit latrines, etc.

(2) The site of the well head should be slightly raised if possible, to avoid the entrance of flood water.

(3) An area of 100 ft radius all round the well should be fenced off.

(4) A water tight lining of stone and cement, or iron, should be built for six feet down the ~~xxxxx~~ sides of the well, because water percolating through at 6-12 feet deep is usually purified, but at a higher level it is liable to contamination.

(5) A 1 - 3 ft coping should be built above the ground and continuous with the shaft; an area of about 6 ft radius round the well should be cemented or paved.

(6) The well should have a properly fitting iron or wood lid, and, instead of a bucket a small hand pump would assist in avoiding contamination.

Some settlements are fortunate enough to have sufficient spring water to be able to collect it in large storage tanks; these should, preferably, be built of cement and require yearly cleaning. The water is conducted to cisterns inside the house; these should be cleaned every three months and covers used to prevent a deposit of dust on the water. If iron pipes are used throughout this system they are liable to rust owing to the acidity of the peaty water. This iron not only stains the water but may cause diarrhoea. This can be remedied by a coating of bituminous material such as "Rosphaltic", made by Owen Bros, Ltd., of Hull; other remedies include lime wash and portland cement. The use of lead

pipes instead is not /

pipes instead is not advocated in soft, peaty water as it is in plumbo-solvent. The best type of pipe is a light gauge copper piping with compressed joints.

To protect pipes from the frost they should be buried at least 2½ feet underground.

Rain Water. Wooden water-butts are not suitable for the storage of drinking water. Ordinary galvanized iron tanks should be used. These tanks require cleaning out at least once a year, preferably in the winter when water is plentiful, the sides of the tanks should be scraped and lime washed. Rain water is made more palatable and is cleaned by passing through filters such as Doulton's, or Pasteur-Chamberland's, but these filters become a positive danger unless cleaned with the utmost regularity.

IV Waste Water.

Waste water is best conducted down wide pipes either ontp the forshore or into deep soakage pits filled with rubble, old metal and tins, If one pit does not suffice then a series should be constructed with connecting overflow pipes. Much unpleasant smellcould be avoided, especially during the summer months, by the use of grease traps at the sink.

(V) Washing Accomodation.

Facilities for washing and bathing might be improved in any of the cookhouses by the construction of sheds fitted with a boiler, full sized baths, and wash basins. The men should be given every encouragement to bath and to wash their hands before eating.

Waste products of the body are given off by the skin in the form of perspiration and it is very benificial to the health to keep the skin clean. This is especially necessary during heavy work such as shearing. A warm bath is also a very good restorative after long rides in rain or wind.

(Vi) Kitchens.

Most kitchens are kept in a very clean condition; but a lot depends on the cook. It would be to advantage if dirty cooks were dealt with more firmly. They should be made to keep the whole cookhouse clean; not only the kitchen itself but also the bedrooms and common room. It would be as well if managers occasionally enquired into the food provided in cookhouses, as not only can considerable discontent be bred amongst the men by an indifferent or careless cook, but also the mens' health and work may suffer. The use of green vegetables should be especially encouraged, and it would be better if some system could be arranged whereby the growing of vegetables for use in the cookhouses should not be so dependent upon the whim of individual cooks.

(Vll) Food Stores.

These need constant supervision, painting and repairing to keep them clean and fly proof. The insides should be scrubbed regularly and frequently.

- - - -

To summarize and Tabulate the requirements of houses and cook houses.

(1) Adequate shelter and cubic capacity for its occupants.
(2) Freedom from serious dampness.
(3) A state of good general repair.
(4) Satifactory lighting and ventilation.
(5) Proper sanitary conveniences and adequate arrangements for the disposal of waste water.
(6) Satisfactory water supply with adequate protection.
(7) Adequate washing accomodation.
(8) Facilities for preparing and cooking food.
(9) A cool, well ventilated meat house and larder.

- - - - -

Slaughter Houses.

It is strongly urged that every settlement should have its own slaughter house for the killing and preparing of meat. This building should be constructed on a site at least 100 feet away from the dwelling houses. It should be well ventilated with through draughts and the floor should be made of cement with a slope towards a trapped gulley with grating bars not more than $\frac{3}{8}$" apart. The walls should be smooth up to the height of 7 feet, tin sheeting being very useful for this purpose; all ledges and corners should be avoided.

Each slaughter house should be provided with a water-tank, the bottom of which should be at least 6 feet above the ground in order to give pressure to the water which should flow from a tap inside the house. The house should be washed down within three hours of slaughtering. The whole of the inside of the building needs washing with hot lime wash four times a year.

- - - -

This concludes the section dealing with buildings in general.

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Food. (i) GENERAL DIETETICS

The first thing to realize about food is that it is made up of various constituents all of which are necessary for the proper functioning of the body and for the maintenance of health.

It has long been recognised that food has two main functions, to provide warmth and energy for the body, and to building the body tissues, the first function is performed by foodstuffs known as Fuel foods; the second by those known as "Body Building Foods". A third type of foodstuff has recently been recognised, Protective Foods, without which, the body falls a prey to certain deficiency diseases such as rickets and scurvy.

There are six main constituents of food:-

(1) Carbohydrates are all starches and sugars: purely fuel foods which never enter into the living tissues.

(2) Fats are again pure fuel foods having an energy giving value about 4 times as great as an equal quantity of carbohydrates.

(3) proteins are body building elements of considerable complexity, being composed in varying numbers and proportions of substances known as amino acids, proteins may be found in meat, fish, milk products and eggs, in which case they are known as animal protein of first class biological value: They may also be found in cereals and pulses, particularly the former. In that case they are known as vegetable proteins of second class value. It is inadvisable that all the protein taken should be of vegetable origin.

(4) Water. is essential life: death ensures after 10 days without it whereas a man can live for 60 days without food. Water constitutes a large part of our foodstuffs, but even so it should be taken liberally as it is necessary for the absorption of food: for the flushing of the system and for replacing the moisture lost in perspiration, respiration and excretion.

(5) Mineral Salts. are those parts of food which are left behind as ash when it is burnt. They are only needed in minute quantities but they are essential for health. The chief salts likely to be missing from an ordinary mixed diet are calcium, phosphorus, iron and iodides. The chief sources of calcium are milk and cheese, it is also present in egg yolk, green vegetables and bran. As calcium is almost completely lacking from the soil of the Falkland Islands it is necessary to eat freely of calcium containing foods in order to take the required amount.

Foods which contain mineral salts in appreciable amounts are known as protective foods.

(6) Vitamins are chemical substances of vital importance to life which are present in minute quantities in certain foodstuffs. At least 5 vitamins are of vital concern in our diet as they cannot replace one another as can different carbohydrates, fats and proteins. A total lack of any one vitamin for 3 or 4 months results in death; a shortage of vitamins results in more or less serious ailments.

Vitamins can be removed from food in the milling of cereals or in the water used for cooking. Heating, aging and drying of foods has a harmful effect on certain vitamins. Vitamins, or the substances from which they are formed, are found primarily in plants, and the vitamins present in animal food were originally derived from plant food.

Vitamins are present in very small quantities in different foods and very few foodstuffs contain them all, but they are essential to health and life.

Vitamin A. is generally found in all animal fats, except lard, and in green vegetables. It is a fat soluble vitamin. Cod Liver Oil is the best source of vitamin A which is stored in the liver and need not, therefore be taken daily provided that it is taken in sufficient quantities.

Vitamin A is essential for growth; it protects us from many infections, especially those of the eye, ear and nose: lack of it leads to /

of it leads to serious eye trouble.

Vitamin D, the other "fat soluble" vitamin, is usually found together with Vitamin A in most animal fats. It, also, is stored in the liver. It can be made in the body by the action of ultra violet rays upon a substance called ergosterol which is found in some foodstuffs. Vitamin D protects us from rickets, in the absence of sunlight; it is essential for the formation of good, healthy teeth.

Vitamin B or B1. is chiefly found in the seeds of plants, in eggs and in the internal organs of animals. It is a "water soluble" vitamin. Vitamin B is not stored in the body and shoul therefore, be taken daily. Yeast and wheat germ are the riches sources which are sold under the commercial names of marmite and bemax. A lack of Vitamin B leads to Beri-Beri; a shortage to many ailments common amongst civilized people, such ailments as indigestion, constipation, colitis, head aches, anaemia, nerve and heart troubles.

Vitamin B 2 or G is found in meat and is also found together with Vitamin B in yeast, wheat germ and some other foods. It is also a "water soluble" vitamin. Vitamin B2 is only stored in the body to a very limited extent, therefore it should be taken frequently. A lack of Vitamin B2 leads to pellegra; a shortage to digestive Troubles, skin eruptions and mental symptoms.

Vitamin C, the other "water soluble" vitamin, occurs in fres fruit and vegetables. The richest sources are the citrus Tomatoes, potatoes, and raw swede juice. Vitamin C is not stored in the body and should be taken daily. A lack of it causes scurvy; a shortage of it has a bad effect on the te and gums.

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A well balanced diet should contain all the vitamins and mineral salts and body-building foods in the following proportions. Carbohydrates $\frac{2}{3}$; Fats $\frac{1}{6}$; Protein $\frac{1}{6}$; In the Falkland Islands too much protein is eaten, owing to the cheapness of meat, and not nearly enough green vegetables are taken, thus causing a shortage of vitamins and roughage, both of which are contributory causes to the all too prevalent constipation.

The question of practical dietetics cannot be better summarized than by Ackroyd and in the League of Nations quarterly Bulletin on Nutrition and Public Health 1st June, 1935.)

Milk is a necessary food for children

Dietary Requirements in Simple Terms.

The essence of modern practical dietetics can be briefly expressed in simple language in terms of actual food stuffs.

One of the principles which emerges in the desirability of a mixed diet; the many food factors which are necessary for life and health are more likely to be supplied by a varied diet than be a monotonous one. A second important principle is the value of a large intake of "protective foods" milk and green vegetables (to which may be added fruit). Milk and cheese are rich in calcium and supply proteins of high biological value and Vitamin $B_2$. Milk fat in its various forms is an important source of Vitamin A.

On account of its high content of valuable food factors, milk is a necessary food for children and for pregnant and nursing mothers, making good the deficiencies of meat, root vegetables, tubers and cereals. One of the most essential tasks of public health administrations is to ensure that children receive an abundant supply of uncontaminated milk. Adults as well as children may benefit from a high milk consumption.

In general, green vegetables resemble milk as regards protective food value; they are moderately rich in Calcium, Vitamin A and water soluble vitamins, notably C. As a scourse of iron, they are superior to milk. Fruits are valuable in that they supply vitamin C., and for other reasons. The encouragement of the production and consumption of these "protective" foods is a valuable public health activity.

Once the consumption of "protective" foods is assured, elasticity in the remainder of the diet is permissible and choice may be allowed free range. Meat, which some class amongst the protective foods, in moderation is a useful and palatable article of diet, supplying first class protein and Vitamin $B_2$; glandular organs and blood are, however, richer in vitamins and mineral salts. Unmilled cereals are richer than milled cereals in protein, minereal salts and vitamins, and, for this reason,

American workers /

American workers have recommended that one third of the cereal should be in "unmilled form"; the same opinion is also being advanced in France. This, applied to the reasonably varied diets of Western civilization, seems a reasonable idea, to which may be added the suggestion that children and pregnant women should consume wholemeal bread.

The greater the quantity of cereal in the diet, the more important it becomes that the more nutritive parts of the grain should be consumed.

In temperate lands, it is difficult to provide sufficient Vitamin D through the medium of a diet composed of ordinary foodstuffs. Infants and children fed according to the usual dietary customs of Western civilization need to be supplied with "extra" vitamin D in some form - e.g., cod liver oil. Such provision will ensure freedom from rickets and from dental caries.

A well balanced diet containing abundance of the various food factors is particularly necessary to children, expectant (4) and nursing mothers, and those required to make exhausting physical (4) efforts. It has repeatedly been observed that hard work disposes an individual on a defective diet to deficiency diseases. A diet which may keep an adult living an unexacting life in fair health may fail to meet fully the requirements of a growing boy and be inadequate for times of stress. (pregnancy, hard manual work, exposure to infection, etc.

(ii) Milk.

It has been conclusively established by investigations in institutes for children and amongst the general population that the provision of xx adequate fresh milk ~~xxxxxx~~, in the daily diet of children, materially improves their physical condition and promotes growth and development. Milk and vegetables supply deficiencies in first class protein and therefore tend to raise "borderline" diets to an adequate level. Milk itself supplies first class protein fats in a digestable form, calcium which is so essential for the formation and preservation of teeth and bones, and also vitamins, especially A and D. The vitamin content of the milk depends upon the seasen and the amount of green food given to the cow.

While advocating the use of fresh milk as a food, it must not be forgotten that dirty or contaminated milk is a source of real danger which can, however, be avoided by proper care and control over those responsible for milking. Milk in the udder is normally sterile, but it is a perfect medium for germs to grow in, once they are given access to it. These germs multiply rapidly every hour. The top milk in a receptacle contains more microbes than the lower.

In order to avoid the anneccessary introduction of germs certain precautions should be observed.

The cowman should wash his hands before milking each cow; but the practice of milking with wet hands is to be deprecated. It is an added advantage if he wears a clean, white washable coat over his ordinary clothes.

The teats of the udder should be washed prior to milking and the first two streams of milk from each cow should be directed into a separate can and thrown away in order to ensure that the passage of the teat is clean.

Milking stools should be kept very clean, more especially the upper part of the legs, as they are frequently handled during the milking.

Manure should /

Manure should be removed from the shed at frequent intervals. In particular the rear part of the stall should be kept clean,[1] as dung is one of the most common causes of milk contamination. It is an added advantage if cows are groomed every day, as there is then less likelihood of dirt and hair getting into the milk.

The milk should be removed from the cowshed immediately after milking, cooled to 50° F, or less and kept in a cool place. Immediately after use the utensils should be rinsed with cold water; not with hot water as it precipitates a deposit on the pails. The pails should be scalded with water in which soda has been dissolved. The water should be hot enough to scald the pails properly so that they will dry themselves when inverted on a rack, thus avoiding the use of a cloth which might introduce germs.

It would be to advantage if all milk were filtered. This is easily done by using a milking pail[2] with a small opening to which a filter is attached.

Milk is a much better food if it is not heated or boiled, as heat destroys some of its most valuable properties such as vitamins. Milk is quite safe provided that it is taken from a cow free of Tuberculosis and that every care is taken in preventing the contamination by dirt which might occur in the milking, handling and storage of the milk.

It might be of interest to note some of the various diseases which may result from the use of dirty or contaminated milk:- Septic sore throats, Summer Diarrhoea, Dysentry, Typhoid Fever, Diphtheria, Abortive Fever, and, in the case of cows suffering from Tuberculosis, various kinds of Tuberculosis in human beings is apt to result, especially Tubercular disease of the bone.

In spite of its liability to infection and contamination, most of which could be avoided if more care were taken in milking the cows, there is no doubt that milk is to be considered a most useful food, especially essential to growing children /

growing children who require the Vitamins, the Calcium and the Fats contained in the milk.

It would be a good thing if some of the surplus summer milk could be used for making butter and cheese.

Notes.

(1) On the whole the Milking sheds in the Falkland Islands leave much to be desired. The Medical and Stock Departments would be very willing to submit plans, approved of by the Ministry of Agriculture, to anyone interested in the construction of proper cow byres.

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(2) This type of pail (2½ gallons) can be bought for 21/- and the filters for 3/6 a dozen. The Wessex Supplies Ltd. Wells, Somerset, stock carefully worked out devices for the production of clean milk.

(iii)

# M E A T .

There are certain conditions and diseases which make meat unfit for human consumption. Fortunately in this part of the world the meat is generally very wholesome.

The most common diseases of animals likely to affect the quality of the meat are as follows:-

Anaemia.

The carcass is emaciated, the flesh pale, watery and flabby. There are small haemorrhagic spots in the muscles and organs. Such meat is unsuitable for human consumption.

Bruising.

The muscles are usually lacerated and infiltrated with blood. The meat sets badly and is of poor keeping quality. If the bruising is extensive, the carcass is unfit; if it is not extensive the bruised parts may be cut out and the rest used.

Decomposition.

This begins on the surface of the meat, very often in animals which have had fever, or have been insufficiently bled. The meat turns a greenish colour and has an offensive smell. Bone Taint is especially found in the muscles adjacent to the hip and shoulder joints. The meat is unfit for consumption.

Caseous Lymphadenitis.

A disease of sheep which chiefly affects the glands, showing itself by a greenish yellow, cheesy matter. The disease is always generalized, due to the diphtheroid Preisz-Nocard bacillus. The carcass must be condemned.

Septicaemia, Septic Intoxication or Blood Poisoning.

This may follow wounds, peritonitis, pleurisy, acute mammitis in cows, the retention of the afterbirth in cows, acute enteritis in calves and cattle. It leads to insufficien rigor mortis and imperfect bleeding. The meat is soft, wither ed, watery, and of a peculiar dark colour, it gives off a

sweetish, repugnant /

sweetish, repugnant odour during cooking. The meat is unfit for human consumption.

Johne's Disease.

This is a chronic, infective enteritis affecting cattle and sheep. It causes emaciation and anaemia. The carcass must be condemned.

Milk Fever.

The meat of cattle killed during the early stages is harmless but of an inferior quality.

Pleurisy.

The lungs are adherent and the chest contains fluid; but the rest of the carcass is fit for eating providing that there are no signs of Tuberculosis and that the meat is not dark, sticky nor fevered.

Acute Fever.

The muscles show bleeding spots, the flesh is dark and sticky, the organs may be enlarged with congested blood and the flesh may feel soapy. If the condition is generalized the carcass should be destroyed.

Pneumonia.

If the carcass is not fevered nor emaciated, it suffices to condemn the lungs.

Other Conditions.

The meat of animals overdriven or killed during parturition is fit to eat if it has a normal appearance.

Meat Parasites.

(i) Tape Worm(Taenia Solium) is only found in pigs. It causes the condition known as measly pork. It affects the muscles and the liver, which presents a mottled appearance due to numerous small cysts $\frac{1}{20}$" to ½" in diameter, each containing a bladder worm (cysticercus cellulisae). The meat is flabby and soft. Thorough cooking kills the larva, but the meat is not recommended for human consumption.

Infection may be carried by auto-infection or by the contamination of the pig's food with human faeces containing the eggs.

(ii) Tape Worm (Taenia Saginata) is found in cattle and is more common. The worm may be 20ft in length. The parasite produces "beef measles". Cooking kills the larva, but the meat is of very inferior quality.

(iii) Tape Worm(Taenia Echinococcus) causes Hydatid Disease. The dog is the intermediate host. The worm may be passed to man through eating insufficiently washed, uncooked vegetables contaminated by dogs; but more frequently it is passed to man through dogs licking people's hands. It is a very common disease in Australia, and one child in this Colony has been found suffering from it.

(iv) Tape Worm (Taenia Coenurus Cerebralis) is found in young sheep up to 2 years of age. It causes a condition known as "sturdy","gid", or"staggers". The brain is the usual seat of the cyst, which is the size of a walnut. The head should be burnt. If cheesy nodules are found in other organs they should be condemned, as should all emaciated carcases. The dog is the man's host.

/

(v) Tape Worm (Dibothriocephalus Latum) has an intermediate stage in certain fish. Probably the worm does not occur in this colony.

(vi) Trichina (Trichinella Spiralis) occurs chiefly in pigs and rats. It causes numerous cysts in the muscles. If raw, or partially cooked, infected flesh is eaten by man, similar cysts form, giving rise to muscular cramp and high fever a week after.

(vii) Bot or Gad Fly. is a source of worry to cattle and may cause suppurating wounds if it bites man.

(viii) Liver Fluke. is said not to exist in the Falkland Islands, and man is rarely infected.

Other Conditions. Fly blown meat is not fit for human consumption.

II

## ANIMAL DISEASES AFFECTING MAN.

There are several diseases found amongst the animals in this country which should be of particular interest to the farmer in as much as human beings are liable either to catch them, or to develop some other illness as a result of coming into contact with them.

(i) Tuberculosis.

Tuberculosis occurs amongst cattle, swine, poultry, dogs, sheep and horses, (in order of their liability to infection); but it is chiefly amongst cattle that the disease is of importance to human beings. The highest incidence of disease is found amongst stable reared animals, but it is not unknown amongst stock which have never been inside a shed. Sudden changes in the weather, calving and old age are predisposing causes. No breeds are immune, but Highland, Welsh, Herefords and Galloways are less frequently affected than Shorthorn, Ayreshire and Channel Island breeds.

The disease is conveyed to other animals by the nasal discharges, the sputum, the urine, the droppings (1) and also by infected milk given to calves and other young animals

All kinds of tuberculosis are difficult, even for vetinary surgeons, to diagnose in their early stages.

Tuberculosis of the lungs, the most common form of tuberculosis amongst cattle, manifests itself by a dry, short vigorous cough, often brought on by sudden getting up or by drinking cold water. Later a soapy, yellowish grey discharge comes from the mouth and nose and the animal shows evident signs of wasting.

Tuberculosis of the abdominal organs is a more difficult condition to diagnose, as often there is very little wasting.

Tuberculosis of the udder begins as a diffuse, painless

swelling /

swelling in one or both back quarters of the udder; later it develops into hard nodules which may spread to the front quarters. These nodules are firm, painless and hot to the touch; they may cause the teats to assume an irregular direction. At the upper border of the udder, affected lymph glands may be located. The milk itself is at first normal in appearance, then it becomes thin and greenish yellow in colour, later white flakes and curdled masses form and finally the milk assumes a watery appearance. It should be added that the milk production, at first normal in amount, gradually decreases.

Generalized Tuberculosis shows itself by the enlargement of lymph glands all over the body.

The only sure means of proving the existance of Tuberculosis in cattle, apart from those obviously diseased, is by the double intra-dermal Test.(2)

It is desirable that all diseased cattle should be destroyed, as there is no cure for tuberculosis.

Tuberculosis amongst other animals is fortunately rare, but whenever it occurs it is better to destroy the bird or animal.

On no account should the flesh of animals suffering from Tuberculosis be eaten.

Notes.

(1) The Tubercle germ remains alive in manure from 2 - 12 months, depending on the season.

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(2) At the time of writing(March 1936) the Double Intra-dermal Tuberculin Test is being made on all dairy cows in Stanley. It is hoped to be able to carry out tests on cattle in the Camp.

(ii) Mastitis.

Mastitis in cows is also known as Garget, Caked or Hard Bag. There is an acute form, starting a few days after calving, which is often fatal; another form is epidemic during the summer months amongst dry cows and virgin heifers; the third and commonest form is a chronic infective condition, having little effect on the general health, but gradually leading to a dry quarter. When the cows are suffering from mastitis pus often appears in the separator as a thick, yellowish fluid.

There are certain predisposing causes:-

(i) Incomplete milking, "overstocking".

(ii) Direct injury, through rough handling, lying on rough and uneven ground, biting by the calf.

(iii) Exposure to damp and cold.

(iv) Dirty hands of the milkers.

(v) Infection carried by flies.

Mastitis is more common in the hind quarters of the udder. The result is a diminished milk yield, deficient in fats and milk sugar, but having an excess of salts which give a salty taste to milk and butter.

At one time it was thought that the milk of cows suffering from mastitis caused sore throats in human beings, that is now doubtful: but the milk of cows suffering from mastitis is undoubtedly of very inferior quality and bad for those who drink it.

(iii) Ringworm or White Flaw.

Outbreaks of ringworm are common amongst young stock, especially in the spring. In places where the boundaries have timbered posts, ringworm is apt to break out annually.

In order to prevent the infection attacking human beings, the persons handling infected animals should wear washable overalls and clean and disinfect their hands. All rubbing posts, railings and stalls should be cleaned and limewashed.

The treatment. /

The treatment for animals is the application at intervals of a week of

Creosote 1 part.
Olive Oil, 8 parts.

To cure human ringworm is much more difficult and may require treatment for a year or more. Compounds of sulphur and mercury are very effective.

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Only these three diseases have been mentioned, as they are prevalent in the Falkland Islands. It should, however, be borne in mind that the following diseases are liable to be transmitted to man:-

Anthrax.
Glanders.
Contagious pleuro-pneumonia.
Rabies.
Sheep pox.
Foot and mouth disease.
Epizootic abortion.
Sheep scab.
Actinomycosis.
Tetanus.
Scabies.

## ILL HEALTH and INJURIES.

(i) HEALTH As medical advice is often difficult to obtain in the camp, it is recommended that each station, and certain outlying houses, should have some kind of medical reference book. The following list is a selection of books recommended in order of merit:-

(1) Black's Medical Dictionary. 18/-

(2) Everyman in Health and Sickness. Dr. Harry Roberts. 12/6

(3) Cassel's Ready Reference Family Doctor. 10/6

(4) Textbook of Domestic Medicine and Surgery. G. T. Wrench. 6/-

(5) Modern Family Doctor. 7/6

(6) The Doctor at Home and Nurse's Guide. G. Black. 5/-

(7) Copeland's Home Medical Book. 3/6

It would be a good thing if each manager had on the station one or two of these books, both to assist himself when he is asked for help, and to enable him to give the doctor more precise details when he asks for medical advice and aid.

It would also be very useful if each station, and the more distant houses, kept the following medical requisites:-

| | |
|---|---|
| Thermometer. | Aspirin. |
| Splints. | Iodine. |
| Triangular Bandages. | Gargle. |
| Bandages. | Castor Oil. |
| Flannel Bandages. | Salts. |
| Strapping. | Stomach Mixture. |
| Cotton Wool. | Diarrhoea Mixture. |
| Lint. | Fever Mixture. |
| Boracic Lint. | Cough Mixture. |
| Oiled Silk. | Oil of Cloves. |
| Surgical Scissors. | Ear drops. |

| | |
|---|---|
| Eyebath. | Boracic. |
| Medicine Dropper. | Lead and Opium Lotion. |
| Medicine Glass. | Calamine Lotion. |
| Feeding Cup. | Zinc Ointment. |
| Bed Pan. | Ointment for Haemorrhoids. |
| Enema Syringe. | Vaseline. |
| Hot Water Bottles. | Linseed for Poultices. |
| Safety Pins. | Mustard Leaf. |
| Lysol Disinfectant. | Cod Liver Oil. |
| Potassium Permanganate Crystals. | Picric Acid. |

It is hoped that these few suggestions might be useful in case of sudden injury or sickness. It would be of considerable assistance to the Medical Officer, and thus to the patient if, when sending for assistance either by message or telephone, some details were given of the patients symptoms and condition, including pulse and temperature.

(a) PULSE.

The pulse should be taken on the inner side of the wrist, near the thumb. Remember to take it with your fingers, not with your thumb, which has its own pulse. The average pulse rate is 72 beats per minute; but it may vary in health from 50 - 90; it is quicker in childhood and slower in old age than in middle life. It increases in all feverish states.

(b) TEMPERATURE.

The most accurate method of taking the temperature is in the mouth, under the tongue, and not in the armpit. Normal Temperature is 98.4° Fahrenheit. The thermomater should be put well under the tongue and the mouth kept closed. The temperature of babies and small children should be taken in the armpit. It depends on the make of the thermometer how long it

takes to register /.

takes to register the temperature. Before and after use the thermometer should be well shaken down and washed.

(c) Respiration.

The average rate of respirations is 15 to 20 per minute. It is very important to know the respiration rate in lung diseases, especially in Pneumonia. It is better to count the respirations unknown to the patient, so that he will continue to breath naturally.

(d) Transport of the Injured.

Certain points should be remembered in carrying the injured. Severely injured or shocked patients should be carried lying down. In the case of injuries to the back the patient should be transported on some rigid form of stretcher; when bones have been broken they should be temporarily supported during transport. When the chest has been injured it is often more comfortable to carry the patient in a propped up position, turned slightly towards the injured side. In painful abdominal conditions the patient should be carried on his back with his knees drawn up. It is more comfortable if a cushion is past under his knees. The patient is usually carried feet first, except in going up hill or upstairs, when the position is reversed

(ii) ACCIDENTS.

(a) Haemorrhage or bleeding. The most important thing to do is to treat all haemorrhages first, before the patisnt loses too much blood.

There are three types of bleeding:-

(i) Arterial, in which the blood is bright red and flows in spurts.

(ii) Venous, in which the blood is dark in colour and flows in a steady stream.

(iii) Capillary, in which the blood oozes from the wound.

Arterial /

Arterial haemorrhage is the most serious of the three types and the most difficult to stop. Venous haemorrhage is easily stopped by pressure, and capillary haemorrhage gives little trouble except in the case of "bleeders".

Bleeding may stop naturally; if it does not, it is necessary to apply some form of artificial control such as direct hand pressure on the bleeding points, elevation of the wounded part, pressure on the main artery of supply by means of a tourniquet, or the application of styptics, such as hot, or very cold water, Adrenalin or Iron Perchloride.

In cases of internal bleeding the patient must be kept quiet, still and warm, and no stimulants must be given.

If a tourniquet is used to stop bleeding it should be loosened from time to time in order to restore circulation to the affected part.

(b) Wounds. All wounds should be dressed as soon as possible in order to avoid infection. If a doctor is close at hand it is only necessary to cover the wound with a clean cloth or handkerchief; if no doctor is available the wound should be cleansed by washing with clean, preferably boiled, water and by painting with iodine. It should then be tied up.

(c) Fractures. There are several varieties of fractures of the bone:-

(i) Simple Fracture, when the bone only is broken and there is no break in the skin.

(ii) Compound Fracture, when the skin is broken and a wound leads from the outside to the seat of the fracture. This is a dangerous type of injury owing to the risk of infection.

(iii) Complicated Fracture, when other vital structures are injured by the broken ends of the bone.

(iv) Incomplete Fracture, when the bone is not broken right through, but cracked down one side like the break in a green stick.

(v) Comminated Fracture, when the bone is splintered.

Certain /

Certain definite signs indicate that a bone has been broken: they may be tabulated as follows, but not all symptoms are observed at the same time:-

(1) Pain.
(2) Loss of Power.
(3) Swelling.
(4) Deformity.
(5) Shortening..
(6) Irregularity of the bone.
(7) Unnatural Mobility.
(8) Bone grating.

Whilst waiting for the medical officer to arrive a certain amount of treatment should be carried out in order to make the patient more comfortable. Any wounds should be dressed. A cold water bandage should be applied to the seat of the fracture. The limbs should be gently straightened out, if it does not cause too much pain, and splints applied. These should be tied at the joints above and below the fracture. Any piece of wood, firm cardboard or even folded newspaper can be used as a splint. It is more comfortable if padded on the inside.

(d) Injuries to Joints, or Sprains. In the case of a sprain, ligaments are torn and blood is poured into or around the joint. Wet compresses and firm bandages should be applied immediately. The limb should be raised and rested. Later, to prevent stiffness of the joint, massage, combined with gentle, passive movements, is advocated.

There are certain other diseases of the joint which should be treated by rest only, until the opinion of a medical officer is obtained.

(e) Burns and Scalds. In the treatment of burns, two thi- must be borne in mind

(1) local injury.
(2) shock to the system.

If /.

Hon. Col. Secretary

It is proposed that lines 19–23 should be deleted from Red 16 & the following be inserted:—

"Milk is a much better food if it is not heated or boiled, as heat destroys some of its most valuable properties such as vitamins. Milk is quite safe provided that it is taken from a cow free from Tuberculosis and that every care is taken in preventing the contamination by dirt which might occur in the milking, handling & storage of the milk."

S.M.O.
1st June 1936.

P.S.
Proposed title cover attached

(38)

5th January 1937.

To Hon. Colonial Secretary.

I have the honour to request that the Government Printer be asked to hasten on the printing of the Health Handbook for use of people in the Camp.

His Excellency asked me to prepare this pamphlet & it was passed to the printer last April.

Although realizing that the printer has been very busy during the interim, I feel that my case might receive preferential treatment, as I would wish to correct the proof before leaving on February 7th

R. Abbreviation
SMO

No. 436/28

(It is requested that, in any reference to this minute, the above Number and the date may be quoted.)

# MINUTE.

10th. March, 1939.

*From* Senior Medical Officer

Stanley.

Stanley, Falkland Islands.

*To* The Honourable,

Colonial Secretary.

I submit herewith the script of a leaflet regarding diet and food as recently requested. We have in the Department the names of all camp subscribers and I would send this leaflet to each subscriber personally. Distribution left to individual camp managers is apt to be haphazard.

G. Lennard

Senior Medical Officer.

Senior Medical Officer's Office.
STANLEY.

(42)

Circular to Camp Subscribers.

Once again the Medical Department invites your attention to the importance of food and diet.

The people who live in the camp should be, and really could be, the best fed folk in the Colony but I know from experience and observation that this is not always the case.

Time and time again we receive patients from the camp into hospital and usually they are restored to health. Seldom is any operation needed and you would be surprised I think, to learn how little medicine the modern doctor prescribes. What we nearly always do is to change the patient's mode of life and particularly his food. We get away from a diet that emphasizes sugar, starch, mutton and tea. We provide variety and an extra supply of the protective foods. It's really very simple. What are these protective foods? They are milk, brown bread, fish oils like cod liver oil, and green vegetables.

I know that in many a camp house and particularly camp cook-house, milk is not consumed as largely as it should be although unlimited supplies could be made available absolutely free.

I know that in many a camp house and particularly camp "cook-house" the garden is not all it might be. There may be a potato patch, a few turnips and some cabbage but not much else despite the fact that a wide variety of vegetables can be successfully grown and at some stations is grown.

Two things therefore I would urge upon you:

MAKE CERTAIN THAT YOUR DIET CONTAINS MORE MILK.

MAKE IT POSSIBLE FOR YOU TO HAVE SOME RAW GREEN VEGETABLE EVERY DAY,

remember that "greens" boiled in an open pot contain little nourishment and are of no more value as regards Vitamin C than wet blotting paper.

I take it for granted you want to be healthy. If you have a family I assume you want your children to grow up with sound teeth, a well shaped head, a straight back and strong bones. The part diet plays in securing these has only recently been found out. I want you, and your family, to share in the benefits of these recent discoveries.

Geo. Kinneard.
Senior Medical Officer.

Extract from Minute from H. E. the Governor to Hon. Col. Sec. of 5.2.54

(Original filed in 0823/D - Standard Medical Kit for farm stations).

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I have only just discovered (in the back of a book-case) this useful little pamphlet of Cheverton's: