

# FIGHTING FITNESS



A.M. PAMPHLET 140

A.M.T. 5

## NOTE

*This pamphlet is no more than its title suggests. It is neither a First-Aid Manual nor a synopsis of tropical ailments. Where information from such sources is required the assistance of the Medical Officer or his staff should be sought at once.*

*This is a training pamphlet, intended to show all ranks going abroad how it is possible to acclimatize the body and to adjust personal habits in tropical and cold climates. It calls for personal effort from each individual, guided by the experience of others, to maintain himself in sound health. This effort is as clear a duty as the routine maintenance of an aircraft.*

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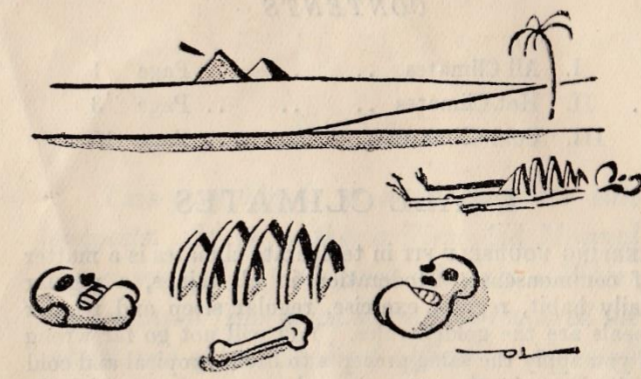
## I. ALL CLIMATES

KEEPING YOURSELF FIT in temperate climates is a matter of commonsense. Moderation in all things, a regular daily habit, regular exercise, regular sleep and regular meals are the golden rules. You will not go far wrong if you apply the same precepts to life in tropical and cold latitudes. At the same time there are snags which do not apply to temperate climates, and he is a wise man who makes himself acquainted with them before he comes up against them. Traveling and campaigning are an art. The good campaigner is the man who keeps himself and those around him as fit, cheerful and comfortable as possible. He knows that discomfort and bad health are Hell's own twins, that they lead to grouching, loss of morale and, ultimately, defeat.



The good campaigner is not a Hell's own Twins. 'he man' who boasts about his capacities to endure discomfort. The deserts, jungles, mountains and polar wastes are strewn with the bones of 'he men'. Some of them scorned elementary precautions in the matter of disease; R. I. P. Others

## All Climates



Strewn with the Bones of He-men

liked to show how hardy they were by walking about in the cold with few clothes on. They went down with pneumonia or frostbite. 'He men' that survive are an infernal nuisance to their companions. In peacetime they may wreck an expensive expedition; in war they clutter up hospitals and communications. So above all things don't try to be a 'he man', and read the following hints and tips carefully. They have been written with the sole object of saving you pain and discomfort in the event of your being called upon to leave these temperate latitudes for service in hot or cold parts of the world.

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## II. HOT CLIMATES

### Eating and Drinking

REGULARITY IN THE DAILY HABIT is the first condition of fitness anywhere, and it is especially important in hot climates. If you miss, don't live in hopes but take a dose of salts.



The daily Habit

Germs, like hothouse flowers, breed more easily and quickly in the heat than they do in the cold, and once they get into your blood they multiply exceedingly. The two principal ways germs enter you are via the mouth and a cut in the skin. Therefore cultivate the suspicious instinct for everything you eat and drink.

Germs are also carried into you by impure water and by contaminated food. Be suspicious of everything you eat and drink unless you know that measures have been taken to ensure its cleanliness. The fly is the principal carrier and distributor of germs in hot climates. You can best get the low-down on flies by picturing every one you see on food as having taken off after a sticky

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landing on a piece of excrement. This will give you a healthy horror of flies and their nasty ways.

Although germs and flies revel in a hot climate, there are limits to their liking for heat. Germs cannot live in boiling water for long. Unless you know that your drinking water has been boiled or chlorinated, boil it for not less than five minutes; then you are safe. But you must do more than this; you must make sure that salad or fruit has been washed in water made pink with potassium permanganate, or in boiled water. In particular, that most luscious of fruits, the melon, is best avoided altogether, unless the source of supply is known and beyond doubt. Native vendors have a habit of soaking it in water to increase its weight and, as it readily absorbs moisture, it may be contaminated through and through.

Other fruits may have been contaminated on their skins by the dirty hands of native vendors, so make a point of peeling all fruit. Also never eat over-ripe fruit, for it is likely to give you diarrhoea. If you do get diarrhoea—and it is a common complaint in hot climates—don't let it go on. Take immediate action, for, although not itself a disease, it may be the first symptom of something serious such as dysentery.

Clean yourself out with two tablespoons of castor oil. It is filthy stuff but a sovereign remedy, and it slides down easily enough between coffee or whisky. Warm the glass and use whatever anti-taste you like.

A frequent source of stomach trouble in the tropics is drinking iced drinks, especially when the body is heated by exercise, as the sudden chilling down of the

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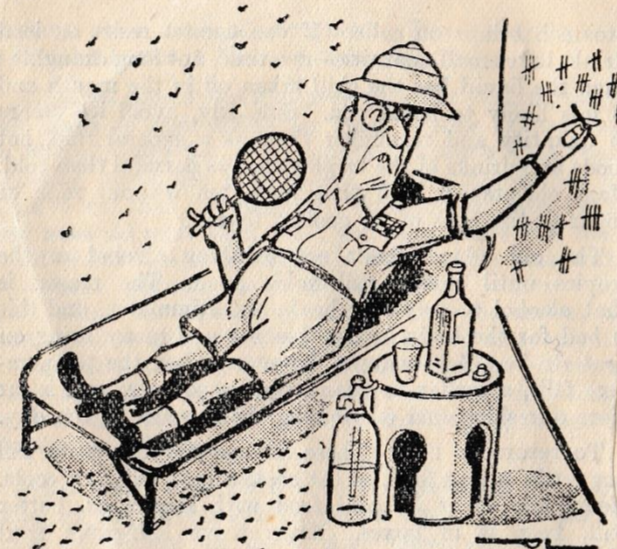
stomach brings on colic. If you cannot resist an iced drink, take small quantities at a time, not long draughts; then the liquid has the chill taken off in the mouth and is less likely to harm you. Similarly, avoid ice cream in quantity and remember that, as a general rule, hot foods and drinks in the tropics are less harmful than cold. Many old stagers hold that weak tea without milk or sugar is the best of all cooling drinks.

The old adage about not drinking alcohol in the tropics until sunset still holds good. The reason is that alcohol temporarily heats and stimulates, and this is bad for the body in hot weather and may bring on heat stroke. At sundown, however, when the temperature falls, a moderate quantity does no harm and is far more refreshing and comforting than earlier in the day.

To return to flies. These disease-carrying pests will not settle on hot food, so eat cooked food before it cools. Meanwhile cover all cold food with muslin or, better still, keep it in boxes. Never leave half-eaten food about, and be regular and methodical in the way you open food tins and boxes. Do not eat food 'on the turn' or leave food in a tin, as it goes bad very quickly and may give you a nasty go of poisoning; and never, never eat food out of a faulty tin; if you do you may get ptomaine poisoning. Apart from protecting food with muslin, or keeping it in boxes, much can be done with a mosquito net over the entrance to a tent. This should be doubled if possible with a space of two or three feet between each net, as this helps still further to keep flies out when people are entering or leaving the tent. Keep fly swatters inside and destroy all the flies you can. Colonel Borstall's record of 9,998 in one hour still stands; try to beat it.

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Colonel Borstall's Record

Infected dust is a deadly spreader of disease in dry climates. Ordure soon dries and pulverizes, and is carried far and wide on the wind, laden, possibly, with germs from a diseased person or animal. Protect food from dust wherever possible, place latrines on the lee side of a camp and as far away as possible, and always camp to the windward of villages, tracks and old camping grounds.

It is a temptation to buy sweetmeats and other dainties at native bazaars, but the temptation is easily resisted if the landing grounds of the thousands of flies on them be remembered. Even native soda-water should be

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suspect, as it frequently consists of nothing more than contaminated water bottled with some gas pumped into it. Be sure you are purchasing a reputable brand when you buy soda water at railway stations or villages. The same applies to the highly-coloured and attractive-looking fruit drinks for sale at native stalls. It is safer to avoid buying food and drink of all kinds from native bazaars.

### Abrasions and Bites

In temperate climates you may not bother to treat minor cuts, scratches and insect bites, though it is always a sound principle not to neglect them. In hot climates they should never be neglected, however small, so carry an iodine pencil round with you and dab every cut and insect bite as soon as possible. If you don't, you may get a septic sore taking weeks to heal and which may easily lead to blood poisoning.

Hot climates abound with biting insects of all kinds. Of these, the worst are the malarial mosquito and the louse. Malaria is the most prevalent disease of the tropics. You will receive advice from your M. O. on how to use quinine to avoid malaria. The following hints, if scrupulously followed, will also help you to avoid it. Sleep behind a mosquito net. It feels close and stuffy at first, but you soon get used to it. The happy hunting ground of the malarial mosquito is stagnant water. If you have any near your camp, and there is no doctor available to take action, act yourself and pour oil on all the stagnant water you can find within a radius of a quarter of a mile. A very small quantity of oil goes a very long way, as the thinnest film on water prevents the breeding of mosquitos. But don't be complacent because you have done this. There

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are always odd places you may miss, such as small pools and hollows in the boles of trees where mosquitos breed in hot moist climates; and even when you have oiled water it will take some time for mosquitos to vacate a vicinity which they are accustomed to infest.

The evening is the time you are most likely to get bitten. Never sit around in shorts after sundown, but cover the knees. Mosquitos will bite through stockings, and even thin clothing, so wear trousers and a jacket. Always keep an eye on your mosquito net. A mosquito will soon find a small tear.

### Insects

Bugs are not only physically unpleasant, they can be dangerous also. The bite of the louse carries the germs of typhus, one of the deadliest of diseases. Keep yourself clean and wash night and morning with a strong germicidal soap. Oilskin is a good protection against bugs and lice. Undress on it or on a sheet of packing paper and keep all clothes off the ground. Do not pull bugs, ticks and leeches off the skin as by so doing you leave the head imbedded, and this will give rise to an irritating septic sore. Remove them by holding a burning cigarette-end against them or by applying salt or brine. Then they withdraw their fangs and fall off. A good tip when marching through a leech-infested

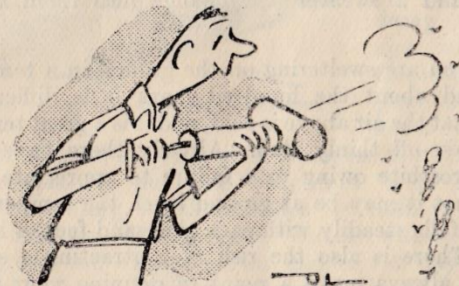
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Pour Oil on stagnant Waters

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country is to cover the boots with grease and sprinkle salt on the grease. It is also helpful to wear puttees round the tops of the boots, though leeches are sufficiently intrusive to get through the folds of puttees and eyeholes of boots. Always treat leech bites with iodine as soon as possible after being bitten. 'Keatings' powder is a good all-round flea and bug deterrent. Carry



Flit it

it in a metal tin. 'Flit' is also effective against flies. When in a tropical jungle, make de-lousing part of your daily routine.

Only two or three of the most prevalent diseases have been mentioned. Personal cleanliness, camp cleanliness and cleanliness in cooking are the best preventatives of disease anywhere. The dirty, untidy camp with rubbish lying around attracts disease just as it makes for slipshod discipline and discomfort.

### Clothing

Another evil of hot climates is chills, and a chill in the tropics is always potentially more dangerous than it is in temperate latitudes as it weakens natural resistance to disease. If you get into a muck-sweat during the

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day be sure to change your clothing at sundown. In the tropics the temperature usually drops sharply at this time. At first, as you sit around in your sweat-soaked clothing, you feel delightfully cool. Presently you notice that your clothing clings clammyly. Then, suddenly, you begin to shiver. That night or next morning you go down with a chill. So carry a spare change of under-clothing and a sweater and change into them in the evening.

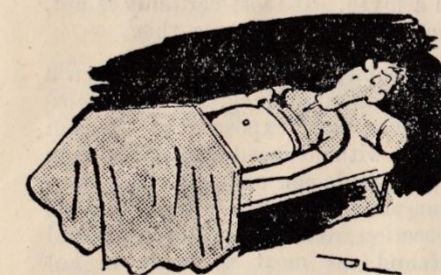
When you are sweltering on the ground in a temperature round about the hundred mark it is difficult to imagine that the air above is cold, and it is a great temptation to take-off thinly clad. Already there have been cases of frostbite owing to a failure to appreciate that, however hot it may be at ground level, the temperature of the air falls steadily with each thousand feet of height gained. There is also the risk of contracting a severe chill. So always make a point of donning your flying clothing; it can easily be kept unzipped for the first few thousand feet.

Another way of getting a chill is to sleep naked or with the stomach uncovered, especially in the draught of a fan, which should never be allowed to play on the uncovered or partially-covered body. However hot the weather may be, always cover the stomach, the most vulnerable part of the anatomy in the tropics.

In temperate climates a pain in the stomach may merely mean that you have been over-eating, but in the tropics regard it as Nature's warning signal. Do not be ashamed to own up to a tummy-ache. Go to the doctor at once or, if there is no doctor available, take castor oil. By dealing at once with any internal disorder you may

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Don't sleep with Stomach uncovered

scotch colitis or dysentery before they have time to get a hold on you.

Another cause of chills is a damp climate and rain. In a tropical down-pour lasting for hours it is next to impossible to keep dry if in the open, as mackintoshes or waterproofed materials only raise body heat and produce sweating, which saturates the clothing as badly as the rain would have done. On the whole, it is best to get wet and change at the end of the day into dry clothing. Spare clothing and socks should be carried in waterproof bags; jaconet and oiled silk are excellent materials for this purpose. Pay particular attention to your bedding, and keep it as dry as possible. Even in temperate climates it is safer to sleep in damp blankets than in damp sheets. If you get bugs in your bedding or clothing, turn the latter inside out and expose them to the sun during the day; it will help to rid them of the vermin.

### Sunstroke

Sunstroke is caused by exposure to high atmospheric temperature and the heat of the sun on the head, not to any special qualities in the sun's rays. When in the sun wear a topee, and disregard stupid people who tell

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you that sunstroke is a myth. It most certainly is not, and there is unlimited evidence to prove this.

If no headgear is available, a handkerchief or even a piece of paper is better than nothing. If the atmospheric temperature is very high, exposure to the sun for only a few minutes without head protection may cause sunstroke. Partial shade can be just as dangerous as no shade. So wear your topee under trees that do not give complete protection from the sun's rays. Avoid heat-producing foods and eat meat sparingly in hot weather. Sunstroke is more likely to occur in hot, damp climates than in hot, dry climates, as damp prevents sweating which is the natural protection of the body to sunstroke.

### General Points

Prickly heat is an irritating ailment in the tropics. It is best avoided by sunbrowning the body as soon as possible, but be careful how you go about this, and only expose yourself to the sun for a few minutes at a time to begin with. Also wear loose clothing and keep the body clean, but do not use too much soap unless it is of a special anti-prickly heat kind. Salt-water bathing is also good for prickly heat.

If by any chance you find yourself out in the blue without any means of making a fire select two twigs, one fitting into a hole made in the other.



Practise this

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That with the hole is held to the ground by the feet and the other is quickly revolved between the palms of the hands. A little heap of charcoal soon collects and can be blown into flame directly after it has commenced to smoulder. Amuse yourself by practising this. You will probably never have to do it, but one day you may.

In snake-infested country keep everything off the ground, but remember that snakes will get into stationary vehicles and into your bedding, especially in damp, chilly weather. If bitten by a snake make two or three cross-cuts in the flesh with a knife until blood flows profusely and rub in potassium permanganate. The wound may also be sucked, but see that the lips and tongues have no abrasions and be careful to spit out the venom. It is a good plan always to examine bedding before getting into it. Also make a point of looking at the floor before you step out of bed, otherwise you may find yourself trying conclusions with a scorpion. Keep your slippers inside the mosquito net.



Make two or three Cross Cuts in the flesh with a knife until blood flows profusely and rub in potassium permanganate. The wound may also be sucked, but see that the lips and tongues have no abrasions and be careful to spit out the venom. It is a good plan always to examine bedding before getting into it. Also make a point of looking at the floor before you step out of bed, otherwise you may find yourself trying conclusions with a scorpion. Keep your slippers inside the mosquito net.

When camping in a tropical forest always choose a clearing if you can, as it is healthier. Try to find a spring of pure water; look for one at the base of rocks or in the neighbourhood of rocks. Remember that water holes are nearly always contaminated, and unless you know enough to pick a good source, boil all water.

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Never go about barefooted in the tropics. Your skin, more tender than that of the natives, can pick up various diseases and small, burrowing worms.

One last word. The tropics are riddled with V.D. There is no such thing as safety or a 'safe house'. It's up to you and due to your wife, your sons and daughters, whether present or future, to avoid this scourge of humanity. It is equally up to you if you do get infected to be treated at once. Then you will be cured, but not unless.

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### III. COLD CLIMATES

#### Clothing

THE BEST CLOTHING FOR CAMPAIGNS in cold climates combines warmth with lightness and mobility. Weight does not mean warmth. Warm clothing consists of layers of light material, the best being Shetland wool. Those with sensitive skins may wear a smooth light material next to the skin and over this layers of Shetland wool which can be adapted in number to varying temperatures. Over all is a light, windproof material of finely woven cotton which prevents the ingress of wind but allows the egress of body moisture.

A good headgear is a woollen balaclava helmet, but fur hats as worn by the Russians, and Eskimo hooded amarakas are excellent also. Failing headgear, a woollen scarf can be used to great advantage. The end should be formed into a headpiece and the remainder wound round the neck as a comforter.

Boots should be on the large side so that more than one pair of socks can be worn and the toes can be waggled freely. It is better to wear one pair of socks, which allow plenty of toe-movement, than two or three pairs which do not. The boots should not be laced too tightly at the ankles, otherwise circulation will be impeded and frostbite may follow. It is worth noting that in all cold climates the natives wear soft-soled boots, which allow complete freedom of movement for the feet; so it is probably always best to obtain, if possible, the local type of boot, such as the Finnesko of Finland and North Russia and the Mocassin of Northern Canada.

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### Cold Climates

A short puttee round the top of the boot prevents snow getting into the latter. It should not be bound on so tightly that circulation is impeded.

A sound type of glove, whether leather, fleece, fur-lined or woollen, has one finger for the forefinger, one space for the thumb, and a space for the remaining three fingers large enough to take the forefinger in addition. Thus the latter can be used separately or in conjunction with the remaining fingers, enabling far more to be done without removing the hands from the gloves than is otherwise possible. In addition to gloves, mittens should be carried. Although their scope is limited in extreme cold, they are very useful during short periods of work when it is not possible to use gloves since they protect all but the tips of the fingers.

In general, the parts of the body it is most essential to keep warm are the stomach, the thighs and the extremities. Of these, the stomach is vital and clothing should always cover it properly. It is necessary to keep the thighs warm because the main arteries feeding blood to the legs and feet are close to the surface of the skin.

If the wrists and ankles are kept warm, the hands and feet will keep warm also. A good way to keep the wrists warm and to save carrying mittens is to cut thumbholes in the arms of a sweater and then pull the sleeves down so that the thumbs go through the holes.

#### Frostbite

Frostbite first manifests itself in the extremities. Discipline yourself to take immediate notice of any loss of circulation. This is indicated by a whiteness and

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numbness in the affected part. Rub in one direction only, towards the heart, as this brings back the cold blood into the warmer blood. Exercise is the best preventive of frostbite. The well-known cabman's arm beat is good, but running on the spot combined with shadow boxing is even better. Deep breathing also stimulates circulation.



Cabman's Arms Beat is good

If you cannot restore circulation to the toes remove the boots and massage the feet. Frostbite may be due to direct contact with the air, as in the case of the nose and ears, to a combination of cold and pressure as in the case of badly-fitting boots, or to damp socks or gloves. Damp socks due to sweating or wet snow are a frequent cause. Always have a spare pair of socks handy. Take care to keep boots watertight by using a good type of boot oil or dubbin. Do not use too much oil as oil-saturated leather loses its waterproof qualities. Never dry wet boots quickly over a fire. This destroys the waterproof qualities of the leather and greatly shortens the life of the boot.

If you suspect frostbite never place the affected part near a fire or in hot water. Cold water or water with the chill off may be used. In any case, seek medical treatment if you cannot restore the circulation after an hour's rubbing.

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In cases of serious frostbite the best possible treatment is the administration of oxygen by breathing, combined with continuous massage.

As far as possible avoid violent spells of exercise followed by spells of inactivity during which there is no opportunity of changing the clothing, as nothing is more likely to produce frostbite than loss of body heat due to sweat-drenched clothing.



Massage frostbitten Feet

#### Drinking

Never take alcohol as a means of warming up. Its effects are temporary and illusory and it leaves the body colder than it was before. Hot cocoa, tea, or coffee with plenty of sugar is far better. Sugar in all its forms is the quickest heat-producing substance. If you are going on a long, cold trip take chocolate or sugar in the pocket and have a snack every half hour or so. It will keep you going, prevent fatigue and promote warmth. If you go for long spells without nourishment in cold latitudes you may experience a sick feeling and a distaste for food. This is a sure indication that food is necessary. The body is like an engine, it must have fuel to maintain its temperature and energy.

If you are out in the blue and have to melt snow or ice for cooking purposes, choose the latter as it needs less

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heat to be turned into water. Eating snow when you are thirsty only makes you more thirsty. It can also in very low temperatures give you frostbitten and cracked lips.

#### Sleeping

The best bedding for cold climates is the double eiderdown sleeping bag, which should be 6½ feet long for a six-foot man and weigh six to eight pounds. It is warmer than a wool, kapok or fur bag of twice the weight. It is better still if the eiderdown is arranged in cellular fashion, or cubiform as it is known, and not quilted, as the bag is obviously thin and inefficient where it is quilted. Do not sleep on the snow if you have no ground sheet, but place tree branches beneath you. It is a good plan also to place them beneath the ground sheet as an additional insulation from the snow or wet, cold ground. Carry bedding in a waterproof bag.

#### Snow Blindness

Always be on your guard against snow blindness. This is most likely to occur when the landscape is uniformly snow-covered, or during a snowstorm. Protect the eyes when the sun is more than half-way to the zenith. Crookes' glasses are excellent anywhere, but a little depressing. Yellow-tinted glasses are more optimistic but impair colour values which Crookes' glasses do not. If you lose your glasses, use a piece of paper with a horizontal slit to see through bound against the eyes. A handkerchief can also be employed as a temporary substitute. Snow blindness is a very painful affliction, can lead to complete temporary blindness in

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a short time and may do permanent damage in the event of a severe attack. It can occur not only in the sun but on grey days also. The premonitory symptoms are usually double vision. If nothing else is available for treating the eyes, cold tea without milk is a good emergency wash.



A little depressing

Sun reflected from snow can burn the skin to such an extent as to produce a fever making sleep impossible. Provide yourself with a good face cream and smear the lips, nose, face, ears, and neck. Renew the application to the lips after drinking. Your face, however ugly, is worth taking care of, for severe sun-burning cracks the skin and reduces the countenance to a state of painful ruin. In particular, beware of sunbathing for long periods before you are acclimatized. Start off by exposing yourself for five-minute spells and gradually work up until you can wallow in the sun for as long as you like and are burned as brown as a berry; but don't try to emulate old stagers at first.

#### General Points

Be careful of charcoal stoves in a small unventilated hut and of primus stoves in a closed up tent. The fumes can produce a severe headache; at the worst they have been known to suffocate people.

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Cold climates are infinitely healthier than hot climates and, apart from frostbite and the art of keeping warm and comfortable, the same rules of hygiene apply to them as to temperate climates. In a hot climate it is difficult to keep cool, but in a cold climate the sensible, well-equipped man can always keep himself warm and comfortable.

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THE following is a list of other pamphlets in this series. If you want copies, apply through the usual channels to A.P.F.S. But, in the interests of paper economy, no requests out of idle curiosity, please.

A.M. Pamphlet	Title
116	HINTS FOR LECTURERS
117	AIR SENSE
121	HINTS ON FLYING INSTRUCTING
122	MORE AIR SENSE
123	INSTRUMENT-FLYING INSTRUCTION ON THE STANDARD PANEL
132	GUNNERY SENSE
136	ENGINE SENSE
137	HINTS ON TEACHING AIRCRAFT RECOGNITION
138	AIRCRAFT ICING
139	BOMBING SENSE

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