South Africa and its climate
with special reference to the treatment
of phthisis.

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Of late years, since the introduction of the open air treatment of phthisis, the number of patients who have been sent out to South Africa for treatment has very largely diminished. And whilst there is no question of the value of the South African climate in the treatment of many cases of pulmonary tuberculosis, there can be no doubt that the advantage of the practice of rendering as all residual cases of phthisis, irrespective of the stage or nature of the disease or of the individuality of the patient, has been a factor adding much to the happiness and comfort of these sufferers in their choice of a climate.

The happy result of the introduction of the open air treatment of phthisis has been that the public at large, have now more realistic ideas as to the nature of the disease and the possibility of cure. Formerly phthisis was looked upon as a hopeless disease, much in the same way that cancer is now regarded. The general practitioners frequently found the greatest difficulty in bringing himself to tell the patient what was his true condition. So that now when there was definite reason to present a pessimistic phrase, such as, 'that the lungs are touched,' or 'that there was a slight weakness in one lung,'
One commonly held the inference in the patient's past being that there was no actual progressive disease present. This was undoubtedly a factor which tended greatly against the success in the treatment of these early cases, for in an acute condition it is more important to make a definite diagnosis at the earliest possible moment. Iron practitioners of my experience in South Africa were well aware of this usual type of case which came to him for treatment. The great majority of cases are well established two evidently have in progress for some time. Frequently they suffer from great prostration, restlessness, palpitation, loss of appetite, a tendency to diarrhoea. Truly cases, with perhaps some fairly definite apical abscess, but when the patient's general condition is good as he is still active and able to take a good deal of exercise, to 'rough it', a little care by no means unwise, but with, yet there are the very cases that are likely to benefit by a residence in that Africa. Usually the patient informs his medical man when asked how long he has been suffering from these chest symptoms, that the disease only began just before he sailed from England.
Further inquiry will in all probability reveal the fact that the patient has been under medical care for some time that the disease is in a matter of fact 1 long standing. We are certain only to place me under 1 advanced phthisis with cavity formation in the one lung, with marked progression at the same time in the other. Indeed in the great majority of these cases it is quite obvious that it was not that the physician did not recognize these cases earlier but that from various and mistaken kindness or from fear lest the truth might too much depress the patient he hesitated to tell him the actual state of his lungs until the symptoms had become too marked to allow of any further concealment. Unquestionably in the past the majority of patients out to South Africa have done badly nor can we be surprised at this when one considers the kind of care and the selection of cases sent out in the latter years of knowledge on the part of physicians as to the conditions both social and climatic prevailing in South Africa. The reader is referred to the literature then.
A young man is sent out with a matter of $50 or $60 which is to last him for six months till he gets work. Well, when it is presumed he will be able to find some suitable employment ready to his hand. He may have been advised to get a trial farm but in all probability where he will he cannot hear of a suitable place. Ultimately he settles down in a boarding house in one of the up-country towns, where the food is very bad. The social conditions, general surroundings are most depressing. Naturally, he begins from bad to worse and soon finds his days in one of the hospitals.

It was an amusing story to the practitioners who dealt with patients of this class. Like a practical philosopher in a country town beyond any inadequate hospital accommodation, there is no system of poor relief.
The voyage to South Africa.

The first question that will naturally occur is: What is the best time to make the voyage? By what time should the voyage sail? Much more care should be exercised by shipping officials with reference to the accommodation of women for suffering from sickness.

As for me, why is it particularly the patient is put into a cabin with me, too, or more than other patients? Besides, the danger of such infection spreading in this way, there is the certainty that the close, stuffy cabin air will act detrimentally on the patient, whilst the very nature of a change of his fellow passenger adds any moisture to the spigot.

This is part of his position; especially is this apt to be the case in the first few days. When the passenger is in all probability confined to his cabin with all the misery of the inconveniences of sea-sickness, South Africa is many miles away. The supply of these supplies will be supplied with boats belonging to several different lines and to those who are able to pay. There is no trouble in finding accommodation as infirmaries can be obtained anywhere at sea.
To those who are able to pay several
dollars accommodation is still very good
and frequently arrangements can be made
whereby a cabin can be retained for
the patient himself at slightly increased
rates. When the steamer’s cabins are
full there are still several times
moving to Australia or New Zealand
from the Cape besides numerous
passenger-trucks which have a certain
apparent claim that the patient should
have a cabin to himself in some view
of view very desirable for one
has to consider that the voyage itself
is often an important factor in the
treatment of the case. Many benefit
may first come from the actual voyage,
the many undoubtedly for much worse.
The importance of fresh air in the
treatment of pulmonary lesions has become
now more recognized, but with fresh air
all much than the patient has to
be subjected to all the evils attaching
the inspiration of re-breathed air in a
dense or stuffy cabin one cannot be
surprised if the results are frequently
unsatisfactory. The importance of
keeping a cabin with an outside
port-hole will be readily understood,
of a corner upper deck cabin with two port-holes can be secured, so that there is a cross ventilation in the cabin, the greater will be the benefit which is secure to the patient. The chief advantage of the upper deck cabin is that it is more likely to be dry in heavy seas, than in a cabin likely to be very wet by close the port-holes. An advantage must be made light of in tropical seas. As regards time naturally about September is the period of the year at which it would be proper to leave England before the end of the European winter. To the can from England and Brightshirt go, and the ship in the middle of September will be a very suitable time, allowing for the return in the early summer of the following year after the East winds have disappeared. But if one is able to make the choice, this applies even more especially to the Australian summer preceding the winter. One would prefer winter a little longer. Only August, September and October are the whole fruit months to return England for me or any other.
in early October. The nights were not very cold, and the mornings were always bright and sunny.

In the month of November, we met with very strong winds and heavy seas, but after a few days, the weather cleared up and we made good progress. We encountered strong winds and heavy seas again in December, but we managed to weather the storm.

The voyage to Australia was very pleasant. The weather was calm and the seas were smooth. The nights were warm and the days were hot. The journey was made without any discomfort or trouble. The voyage was a great adventure.

The voyage to Cape Town was not easy. We encountered strong winds and heavy seas, but we managed to make good progress. We arrived at Cape Town on the 25th of January.
In the height of summer it is likely that wild thickets of shrubs or plants will be required all the way. Hence the patient, who is not in a hospital, but a good walker with a vigorous constitution, is capable of taking abundant exercise. Thus may be a restful, I believe, moment, and, otherwise, with the patient who is suffering from some or his advanced age, an excitation may be preferable.

The journey is likely to prove a cruel and harassing experience to him, and, much better, plan would be to send the patient to the Cape, where many trips might be arranged, whereby the patient could spend the few months in both Africa and Europe returning home to Britain. Then he might proceed by the train to the Capetown and then proceed by train to any of the up-country resorts to visit the Transvaal or Orange River Valley in one long day's journey. Or if the taxi responses though a most enjoyable trip might be made by proceeding from Otterburn visiting Peter in the valley, Otterend, Leopoldsburg, and Easton. This is likely to be a pleasant journey.
From thence the main
train rather to Cape Town or Port Elizabeth
commanded all the health resorts. Much
will be mentioned later. Especially
now. Not so much of interest
connection with the late war is to
be seen a more varied and interesting
opportune be arranged with a
minimum of discomfort both in regards
broad accommodation, rail and railway
travelling.
In my mind a trip like this those from
one week to two months as spent in the
sea and three to five weeks in the
meritorious Balkan climate is likely
to do much more benefit than the
voyage to Australia which is apt to be
a somewhat long, dead weary voyage
for an inexperienced sailor.
Leaving the land then in October or
November we get after the first few
days pleasant. With the following
would till we reach the time
and a coming the the cool a gentle
South West head wind and the weather
is almost invariably fine. The shores
bestowane in mid, to be met with
from April to October or is likely to
be broken whilst the South West monsoon
can be expected from October to April.
It might be improved on the patient's character, and a safer one for a time...

The patient's character is more advanced. He is aware of his feelings, but he is not conscious of himself. He is more to the patient's own nature, as he is aware of the...
The portion of the African continent especially under consideration is that generally known as South Africa, which extends from the valley of the Zambesi in about 15° S. latitude to Cape d'Aguilhas in about 35° S. and as lying between the latitudes of 15° E. and 33° E. This area includes Cape Town, Benoni, Fort Napier, Uitenhage, East London, Middelburg, and Grahamstown or Graham's Town.

**Physical features.**

Taken as a whole, South Africa may be considered as consisting of four plateaux, reached by a series of terraces formed by high mountain ranges running parallel with the coast. Three of these are mere narrow strips leading up to the innermost plateau of high veldt, which embraces by far the largest portion of South Africa. These plateaux are named as follows:

1. **The coast plateau.**
2. **The Southern or Little Karroo.**
3. **The Central or Great Karroo.**
4. **The Northern Karroo or High Veldt.**
Section from Kimberley through Beaufort West to the
Orange River.

Section due North from the mouth of the Great Fish
River to the mouth of the Orange River.

Two perpendicular sections illustrating the
formation of the Four Platanus.

(from Currie's Guide to S. Africa)
Map of South Africa illustrating the climatic zones.

- Coast Plateau
- Northern or Central Karoo

- Central or South Karoo
- The Northern Karoo or High Veldt.

The great plains north of the Orange River include the Orange River Valley, Transvaal, between the Rand and Victoria.
Temperature

Speaking generally of South Africa, there is a remarkable regularity in the mean temperature, owing to the fact that the maximum in elevation above the sea-level neutralizes very largely the maximum in temperature which would be expected owing to the nearer approach to the equator. But that is more important to the climate is the maximum difference which exists between the mean maximum and mean minimum temperature for the day in the mean daily range. Again, the mean daily range itself varies very greatly according to land and climate.

Thus, in Dr. C. H. Darwin's letter from the Meteorological Survey Department of Cape Town points out that the mean daily range at the Cape station was 9.0 °F, whereas at Matatiele it was 33.6 °F. This is of great practical importance to the climate, as it coming out to South Africa, he must be accustomed to officially up-country, whilst he must, after five hours, change his temper immediately the sun sets; then is frequently a rapid drop of several
degree in the temperature. The patient who has been lingering during the heat of the day will often feel a chill or two minutes' time, momentary cold shivering which induces a feeling of chilliness, not infrequently leads to an attack of inflammation attacks which may lay him up in bed for several days. It is always advisable to wear cool and moist the skin, particularly in the morning. It is desirable to change to thicker cotton mantles during the morning hours in the height of summer.

Similarly, the mornings are often cool, and it is not wise to change clothes before the morning heat of the day actually sets in. But in the passage from cold to heat there is not the same danger. The skin's colder condition which is so near during the day may be风扇, or rising in the light, and need not to be near for the rest of the morning. It is a most valuable lesson where it is necessary to brush those which may help to crisp.

Then sudden change in temperature marked feature of the country. Wherever it may be important that the move should be unexpected. The important factor in modifying the extent to which requisite...
brief consideration. In the west coast of South Africa it is found that there is an increase of temperature from North to South. The Meridie Point on the south side of Table Bay is 5.1° warmer than Port Natal, a variation of a little over 1° for each degree of latitude. 

From off Cape Agulhas to the Isthmus there is an increase of temperature of 3.5° for each degree of longitude. In the west coast in winter there is a slight involution of currents, particularly towards the west coast of Africa. There is a mean of temperature from 20° E to 20° W. The west variation between East and West is 0.3°, which amounts to 1.5° for each degree of latitude. These divergent results are largely connected with the ocean currents which reach much southwards. There is an equatorial current which runs much the shores of Brazil and the south of Africa. Along the coast, the Benguela current, which is the cold Benguela current, caused by the upwelling of the colder and deeper waters moving towards the influence of prevailing winds (Hahn).
South only the western parts of South Africa. This shows a difference of
sea temperature of 10° F. to 12° F. between Cape Town and Sidney's Town, although they are
only twenty miles distant from one another.

The mean annual temperature for South Africa generally is 62.8° F., about the
same as that of the summer months in
summer. The mean maximum temperature
to 75° — the mean minimum 50.5°.

Jr, of course necessary to remember

the three hottest months in England
June, July, August — correspond to the three
months of December, January, February for the
months of January and February. The greatest heat
is obtained in February, the mean maximum
temperature in July. In South Africa there
are no such definite divisions of
seasons as there is at home — it would
be more accurate to speak of a
long summer extending from May October
March — a short winter from April
to September.

Rainfall.

In discussing the rainfall it
is convenient to speak of summer
winter rainfalls and that Mr. A. Broten in the report of the Meteorological
Commission for the year 1894 showed that these regions could be divided into
three areas, according to the percentage distribution of rain in the summer -
winter seasons. - These are -

1. Summer rainfall area having more
than fifty per cent. of the total rainfall
from October to March.

2. Winter rainfall area having over
fifty per cent. of the total rainfall
from April to September.

3. Constant rainfall area having the
rainfall equally divided between these
two periods. - See map.

The region of constant rainfall is confined
to a comparatively small area on the
south coast, extending from a point
some distance east of Mount Bay
to Humarock, and thence inland to the
northern limit of Mount Delia.

The striking feature of the rains
occurring at this station in the region of the
summer rains is their appearance in
connection with thunder storms. Even
during the rainy months there is very
little chill or cloudy weather. The sky
is usually clear - bright in the morning,

[Text continues]
Map of South Africa illustrating rainfall.
Towards three or four o'clock in the afternoon, the sky becomes clouded over and a rain, accompanied by heavy rain, generally shortly lasts for a short time, say half an hour. Then, there is a tendency for the rain to recur daily. In the rainy season, the frequent up-country has not little to the plains in the way of dust - usually red dust. Generally, the rain-bearing winds may be taken as follows:

1. In the region of the Indian Ocean, the SE. is the preponderant rain-bearing wind. It is to be noted that these winds pass over the Benguela current, the colder part of the South Atlantic, so as unable to absorb any great quantity of moisture. They are therefore unable to carry moisture for any great distance inland, which would explain the comparatively warm strip of South Africa affected by winter rains.

2. The SW. winds seem to be mainly instrumental in bringing the region of constant rains. They seem to be robbed of most of their moisture...
by the coast range, so that little remains to be dependent on the season.

3. With reference to the prevailing wind, which bears rain to the eastern part of the country in bulk, the climate here has been much different from that of the farmers, who are off to the close of the year, so much as to their welfare in the fall, the condition has been favorable for many of late years, that the north-east wind is the first moisture bearers of wind for the town to reach readers of the country. If we hold the notion that the climate is unfavorable to the growing rain falls, if the country are such that a steady south wind should continue blowing for some days, November in this month, and a change should occur in the direction of the wind producing contrary circumstances, which cause a heavy rain accompanied by a storm, or the wind thunderstorms. Mr. Brown of the weather station has given notice of a heavy rain after a week of fine weather, of the prevailing winds connected with rain, to a different opinion. In a pamphlet dealing with the subject he states that "the greater part..."
of the interior, I find that the vernal rains would seem to me to come in
principally from the north, i.e., winds blowing from the same
northerly latitudes. If the Indian Ocean, passing to higher northern
cold latitudes, were able to carry their moisture far north
for a considerable distance from the south, it would be
practical, valuable and essential from the health
point of view. That is, in the interest of the
rains. All of these rains are chiefly from the north,
the points of the north of Ind. The rain
comes from the north of Ind. I can, in
the point of view, a very
interesting: the climate of the
southern
When one speaks of the south.
me means the rain but wind and dust.
Especially about the
and
opened
a
the
been
up
by
winter
and
as
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to
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by
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active
might very well be suspected, e.g., in 1877, a fair number of cases, with the exception perhaps of those of acute febrile epidemics. For, even now, have been attributed to the dust. But the depressing effect of continuous winds—dust—prevailing perhaps for days, with the employment of dust-removal from the patient—by changing his position, the patient can often escape the winds. It may be advisable in such cases to pass the cold dry months in the Drakensberg Colony or Natal. There—in the most perfectly elevated—i.e., the warm dry months in the western part of the Colony, when one speaks of the climate there, the Okavango, or the great plateau along the north-wond, including the Orange River Colony, is less humid than a large portion of Natal. The table shows that the general features of the climate are not dissimilar to those which pertain in such mountain resorts as Denver (5,000 ft.) or St. Moritz (6,000 ft.). Then follows,
may be summed up as follows:

1. An atmospheric prison.

The higher part of the land above the sea, the characteristic feature of the climate, is far the shorter prison, which comes under Barney's definition of a mountain air, viz.: everything between 2,400 ft. and 6,000 ft. The headquarters of the Cape Colony are one hundred miles (180) miles, with 2,800 ft. above sea level. From this the country continues to ascend gradually till the mountains are reached at an elevation of 5,604 ft.

Dr. Williams believes that not only does the rare frequent and ample breathing of the lung, an air which is known that it tends to produce hypertrophy or irritate the pulmonary in the healthy lung; this air, in any case, makes it more difficult for the patient's lungs to produce sufficient movements of the chest and thus to provide the patient with a vital and healthy condition of the respiratory organs. So much of the condition of life in the countries, where the atmosphere is thin and the climate hot, much of the life is spent in the view of the atmosphere, much is spent in the air. So much is the health of the atmosphere, much is spent in the air.
That then is due to a failure of the inspirations, and we are not to be surprised at any pathological symptoms or weakening of the electricity in the nervous system. But the mind as the agent undoubtedly is, and so more I charge to a large number of pulmonary function. I am, indeed, the great majority of cases undoubtedly come as too late, but since there is evidence of rapid progression with fever than without it, much rehearsal of symptoms almost invariably, or, in fact, the less than the lungs demand in rest, for poor action nor more fatal error could be committed now only and at present (surgery) cannot to a high fever. The patient presented breathing still further hastened and laboured, and the changed condition of the inflamed and distended lungs becomes more acute, then rapid swelling, oedema, and a sense of fever, rapid inspiration. Or again, a case which has shown suddenly the feeling very rapid for sudden oppression and symptoms innumerable in the days owing to...
The extra strain on the long walking, breaking down a fast running track, or becoming extinguished. This will be pointed out. It is the traveler for the purpose of freedom straight up-country has to stay for a little at some center a few hundred feet from the one land and gradually to the summit elevation.

2. Great gapes, clearness of the air.

So these factors combined with diminished barometric pressure is to be largely attributed the peculiar mistiness of the sun's rays in South Africa. The electric properties of the sun's rays, though not very fully understood, are undoubtedly present factors in the treatment of poisons, or some other disease, as we shall indicate in the Khomas. This is the first clearest of the atmosphere to the naked eye. It allows entry of some rays, but not enough, resulting in the disarray in the sun's rays, the fact of blindness is attributed in this case of men.
In India, with a temperature much under that in the desert, the crops are better. Mr. Parkinson attributes a high therapeutic value to the rain, which he says is more frequent than in the desert and it helps to make more and more numbers than in South Africa.

3. Absence of cloud.

As already pointed out in the very season there is a minimum of cloud. Mostly the rain comes in showers during which a heavy downpour occurs lasting for an hour or two, the sky then clearing again.

4. Small rain fall.

The main drawback is the amount from the agricultural point of view, as one of the fortunate features for the invalid. The average rain fall in the Karoo in the Western part only is about 10 inches, amounting to 18 inches in the Eastern part. In the Orange River catching is about 22 inches. For the last few years, however, the rainfall
has been much below the average. The actual ground level of the water has fallen leading to the drying up of many springs on which farmers depended for their supply. In both Africa it must be remembered the rain comes in torrents, only for the short part of the rainfall runs off the rain continues in any way benefitting the land. The rivers with the exception of the Zambezi or the Orange knows are no rivers in the sense of being perennial streams. They are indeed mere channels for carrying off storm waters. As a rule they are dry during most of the year. For instance the Blue Nile which runs through Abyssinia is perfectly dry during the greater portion of the year except for periods when it rises. When known it becomes a mighty raging torrent which starts to the sea with a force so great that any waves which arrive are carried away as if they were small pebbles. This is largely due to two factors:

1. The steepness of the rainfall which does not allow of make-up into the ground.
2. The swift mountain channels which have been formed out of the rocks all over the country carrying with it much...
rich marshes and into the river channel.

1. The rapidity of the drop from the interior to the sea, making the water an invisible force, which would require much more effort and engineering skill to control.

1. How often heavy rainfall there is, has little effect on the water running rapidly if by means of some channel, disappearing rapidly. By precipitation, the surface is quickly dried by evaporation. Measures taken to keep the relation humidity derived from the simultaneous readings of the dry and wet bulbs by the aid of the formwich factor has not the remarkable degree of the rain by country. Thus the meteorological survey by department observatories taken over several years for the mean relation humidity.

<table>
<thead>
<tr>
<th>Location</th>
<th>Mean %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Town</td>
<td>44.9%</td>
</tr>
<tr>
<td>Boston (1493 ft. abm sea)</td>
<td>45.0%</td>
</tr>
<tr>
<td>Bialystok (2837 ft. abm sea)</td>
<td>66.5%</td>
</tr>
<tr>
<td>Quebec (3,800 ft. abm sea)</td>
<td>63.7%</td>
</tr>
<tr>
<td>Bismarck forest (4,618 ft. abm sea)</td>
<td>58.5%</td>
</tr>
</tbody>
</table>

5. The wide daily range of temperature.

The dangers of this wide daily range have already been pointed out but these
is no doubt that it has beneficial effects too. In the summer the heat is very intense and it is impossible for the unshaded to walk about during the hot part of the day. But the tendency to gastric ulcer and hepatic cirrhosis so marked in tropical countries is counteracted by the wide daily range of temperature - the mornings being usually cool and pleasant. In the absence of moisture we can support a wide range of temperature without heat - we can endure much more sun than without desiccation.

6. Richness of the atmosphere with ozone and freedom from organic particles.

While in all probability the presence of ozone in the atmosphere is mainly important as an evidence of freedom from organic impurities there can be little doubt that it has a certain inhibitory action on the formation of life or is beneficial.

To these precautions the air must be aspirated the procedure being carried out by means of a machine which keeps up a current of air.
the event. It was formerly thought that there was a certain epidemic liquid which disappeared did not exist. The disease was supposed to be higher near the equator and decreasing towards the poles. Much less importance is attributed to the fact now. Undoubtedly, in Black Africa, more air, dry winds, sparse populations are the chief factors in producing immunity from malaria. As a matter of clinical experience it is evident that whilst both White and Black are comparatively only attacked by Plasmodium, if they are attacked they seem to be able to make less resistance to the disease than the civilized person. Not infrequently in hospital one sees patients who have contracted malaria in the tropics rule that are are fairly well formed rapidly from bad to worse.

The chief hindrances to the efflux of

1. Insects.

2. Great heat and absence of shade

Throughout the higher parts of South Africa there is a dearth native absence of trees. The moment there begins is the
my road which takes the place of
the other rivers near along the course
of my channels. I accounted this
when chance I make the western
had, I am imposed for the present to
spread the water part of the day in the
world or your country. It will be well
for him to follow the custom of the
farmer. The farmer regulates his life
by the sun. Some after one will
be gone to bed — in the morning he
rises with the sun; get the greater
portion of his day's work finished
before dawn or dark. The mornings
are delightfully cool — to walk or ride
early hours in the most healthful or
interesting part of the day. After the
mid-day meal comes the siesta Commons
till about four or five when again
you begin to experience the warmer
afternoon. Three unmarks are chiefly
applicable to the summer months for
the winter months the unmarked days
are — about three. The whole day
is a place of use to be seen to South Africa.

It must be borne in mind that the
climate of both Africa is a stimulating one. Advanced cases of pithemia require a moderate form of treatment and in all probability will fail quite strongly in the higher heated houses. The bush people climatise so much better for what they call the type of "robust invalid". To benefit the patient must be made such that he is able to take active exercise - his strength or repairs should be but little impaired by disease. During the first few months an African can use to be home of the physical symptoms are acute, so the case is more critical and more heated conditions. The typical life for the invalid in hot Africa is camping out under canvas for a watering can should be done with great impunity from civil unrest - the aim being brought to a weekly constitution among the huts near the medical or in an incomplete hygiene adhering to the irregular forces was by no means strictly carried out. Many bacteriological and certain can be relatively normal people suffer from malaria. Where there is a man in the same type of disease the great majority of these cases they enjoyed during their home quarters service, an almost complete immunity.
from bad symptoms, or they improved both in general health & condition. And this
attributed more the fact that forced marches
was common, frequently they had to be
done in very Sketchy which they had
no opportunity of laying. The food too
was often of the simplest description yet
was the health giving influence of the
open air life, but the majority stated they
had never been in such good health or
condition. The mental factor in these
cases, as was always strongly underlined
and more yet capable of taking
for exercise to derive the full advantage
from the open air life.

Another factor militating against
the successful treatment of physical cases
in the almost complete absence of suitable
accommodation for invalids. Many of the
up-country towns which have a reputation
for the treatment of phthisis are filled with
boarding houses frequently in any surprise
description. The houses are built with the
sole object of admitting a maximum of
of sun light during the summer, so that
they are perfectly well miserable in the
winter months, at any time dull or
muggy, badly ventilated. The food too
is frequently not adapted to the invalid.
Eyes or mild or other causes sometimes not to be obtained at any price. The meat, as a rule, is distinctly inferior quality to the home meat. There is often a want of variety of vegetables. Theundra — limitation — fluctuation of the diet infrequently maintains against the patient's progress, when the patient partly or wholly, will a good digestion, then would be of small matter, but when he is weak. —

Eden the disease is said to be a jute in the hospital. The remedy is. They say, the health of the patient is sufficient to determine a speedy and happy termination to the case. —

The following classes of cases are not adopted for treatment in the higher classes by our African. 1. Patient with cardiac, cerebral, or valvular lesions.

If a mild or only the higher lesions, which produce symptoms of cardiac failure. Patients have frequently to have the manner when they are tracts, owing to alarming symptoms preceding from cardiac failure, and resuming time apart from the actual valvular lesions, many years when the heart...
partake of the general asthenia of the body suffer considerably in proceeding to their high altitudes, especially if they proceed up-country without making a halt at some intermediate point. In a rule we can say that up to about 3000 ft. climbing is more cardiac inеспектив in early morning, unless the air is excessively dry and without wind. The adjective comes to mean that the patient the benefit of a dry, non-bilaterating climate.

2. Cases suffered from much bronchitis or dyspnoea.

These are frequently unsuitable cases, owing to the extra work done in the lungs in maintaining the already accelerated circulation of air and overcoming the extra work thrown on an already dilated left ebulb heart. It is a common statement in medical books that asthma is unknown up-country. But this is by no means accurate. Troublesome cases resisting all treatment are not.
5. These symptoms are acute or from high fever. The patient, who has been under treatment at home for some years suddenly develops acute symptoms, high fever, night sweats, rapid respiration, and difficulty in breathing. The patient is pale, weak, and will not take nourishment. The patient is sent to the hospital. The patient is in a state beyond recovery. The patient cannot be saved. The patient is suffering from climate or climate changes. The patient is suffering from climate changes in the hospital. The patient is suffering from climate changes in the hospital. The patient is suffering from climate changes in the hospital. The patient is suffering from climate changes in the hospital.
Patient of an insatiable morn. 
Temperate and mild in manners is marked by firmness. 

Then patients frequently suffer from anxiety in high situations, or the sedative climate of Madeira or the Balearics is much to be preferred than the stimulating invigorating climate of the north American uplands.

5. Base of albumo-urine.

In these cases whilst a high altitude may seem more indicate it must at the same time be tried with caution.

6. Where there is any intestinal constipation especially of the nature of a secondary nature either infectious.

Though as a rule considerably acute typhoid is comparatively rare chronic perpetuation frequently lasting for weeks is inadvisable. The treatment is commonly met with. Advanced condition is the usual lead to a contemplative form of death; in the present case.
So that we already mentioned above the case
Test-ninches for treatment in South
Africa are those who are capable of a
considerable amount of muscular activity.
Patients debilitated with advanced disease
are also in a state of remission
requiring absolute repose— those affected
are frequently rectilinear without being
show a tendency to develop the suffers
from anuric, tubercular deposits in quite
unnurtured for such a pace. And yet though
the patient sustained an upper
again, this is usually the type of case
which is still more of which naturally
you to call a heavy death will.

II
The following names of cases printed
out by virtue of miserable for high
mountanous health must be taken
as roughly typical of the climate for
South Africa

1. When there is shown will
as a turned predisposition to serious pain
in the head—a

Attempts the latter may be
considered. These cases of chronic bronchial
attacks 0' cold in the chest, or cases.
dehydrated by repeated influenza attacks. Tubercular infection is feared
in children with catabolic conditions.

Sirs, have I included belonging to the

Oorlog and Cape Colony, a few small in size

with much happiness. The press

show how that this is not always

within the reach of all. To start

farming for oneself and one's own

must of capital: required is some to

intand the many trials of the farmer

in the midst of unknown, it does not

demand a great deal, but a fairly

take many years to get sufficient
to start farming. For them who

them as to farmers who in consider, they

a farm or less moderate for them

the world at the same time and

instructive in farming. They then

life combined with the absolute produce

must of response ability combine to give

very good results.

2. Catabolic forms of catabolic illness

with much catabolic disturbance or vin /
3. Case where thin is chronic inflammatory induration - infiltrate of limited portion of lung.

Then case was exceedingly hopeful but as already pointed out there is a large involvement of lung tissue associated with dyspnoea the symptoms in itself alone is bad.

4. These have been the results of extreme attacks of pleurisy in the shape of thoracine - adhrenin.

Then case as a rule benefit greatly from the pulmonary gymnastics visited by treatment at an altitude.
The climate of the different battle-lands in South Africa will vary, be considered in detail, & a few remarks will be made of the more important battle-lands in South Africa. It will be convenient to consider them under the following heads:

1. The coast plateau
2. The Southern Karroo
3. The Great or Central Karroo
4. The Northern Plains of Cape Colony
5. Natal
6. Transvaal

1. The Coast Plateau

The coast plateau as already shown, the plateau is a narrow strip running around the coast of South Africa, varying in width from a few miles up to fifty miles at its widest part. Its climate is largely affected as before mentioned, by the Benguela Current or the Mozambique or Agulhas current, which runs almost straight from the Cape of Good Hope to the Equator. The chief characteristics of the climate are warm, the morning is very warm, and the rainfall. The rainfall varies considerably, as at Cape Town...
25.23 miles to main, as Fort Elizabeth.
It is 20.93; at Karroo 40 in; at
G. Janet's, 53 in; at last, about 33.5 in.
Taken as a whole, the climate of the coast
plain is very pleasant, though from
its humidity and heavy rainfall, it is not
as a rule adapted for the treatment
of phthisical patients. Nevertheless, many,
who cannot stand the home climate, or who
have a tendency, hereditary or acquired,
to it, find it an excellent haven in the
summer.
Cape Town itself is somewhat dis-
appointing on a first view, but it
improves, partly in acquaintance, in the
suburbs. There is a variety of scenery
that can be viewed in all four parts.
Thus, sea front, camps bay, Muizenberg,
Blouberg, Rondebosch, Simons Town,
and Strand are conveniently and quickly reached
from Cape Town; such are the new west-
Muizenberg, Simon's Town, and Strand are the
favourite seaside resorts, and form a
general agreeable climate not too cool
in the winter. In the summer from
November to March, the latter places are
crowded out into summer visitors, many
who are unable to stand the rigorous
years in this climate enjoy good health.
Mosel Bay and Vangers are beautiful parts, unlike the greater part of South Africa, are well wooded. But only to the north, however, where the trees are not adapted to the treatment of high latitude.

Port Elizabeth cannot be commended for its climate. It is a busy port with little interest to the visitor. It is surrounded by flat, sandy, unattractive country. Variable winds and cold balm:

Port Alfred on the mouth of the Sundays River is the finest summer resort for the Western Province. It lies in a beautiful natural setting with magnificent natural surroundings. It is a summer resort during the summer months. Besides, there are several inland towns on the coast platium.

The chief of these are Wemmershoek, Wellington, Paarl, Stellenbosch (all beautifully situated within easy reach of Cape Town).
(500 ft. above sea-level); George (620 ft.);
Hummervarp (260 ft.) and Winchester (140 ft.).
Two of these merit special notice -
Caledon (805 ft.), one of the famous
health resorts in South Africa, is situated
on the slopes of a mountain called
the Zuurberg, is about 85 miles from
Cape Town. It is chiefly famous for its
thermal sulphuric springs, with a temperature
of 120° F. These springs are especially
useful in the treatment of gout, rheumatism,
scrofula, dysentery, neural diseases, neuritis,
or any disease. But the district is
also well suited for the open-air treatment
of summer diseases. The climate is
spatial, pleasant, healthy. There
is another advantage in Caledon
that there is a sanatorium run on
excellent lines. It is one of the few
in South Africa that has established
a number of sanatoria to be done in the
summer. From here the patient does not intend
to make a prolonged stay, a few
weeks or months spend here are often
helpful as a gradual introduction
to the higher altitudes.

George (620 ft.) is somewhat
of the way home located about
thirty-five miles from Anchorage. It is an old town with wide streets well
shaded with trees, and the surrounding
scenery is very fine. The climate
seems to suit many consumptives,
who come here or near the coast
to have a change of quiet or rest in
a more favorable spot could hardly be
found.

2. The Southern Karroo.

In the west side the country
gradually rises from the fertile Gondwana
Valley, which terminates (4,700 ft.) in
a series of hills and low-
lands into the
Malshehorn Valley, where there are several
hills and lowland
summits, less famous
than the
Malshehorn (1,800 ft.); Malshehorn (1,900 ft.);
Kwaini River (2,200 ft.); Bess (1,493 ft.).
Malheur has long been recognized as a
favorable resort for convalescents. It is
surrounded by mountains which screen
it from the south. The winds are gentle
in summer. The days are hot, the
nights are cool. The air is dry
—much of the patients' time can be
spent out of doors. The summer
3. The Great or Central Karroo

The vast plain lies beyond the mountain range called the Great Western Range opposite to Seicante, the Eastern Karroo. It extends from west to east for about 350 miles, at a height of from 2000 ft. to 3000 ft. From a picturesque point of view, it is a dreary and uninteresting country in time of drought, looks little better than a desert. Some small oasis, the source of the Brand River, which the landscape is relieved by some undulating hills and an occasional rise of the Karroo, is a rich enough indication of rain which prevents the soil from being fertile. It can be irrigated, and the land is to be worked anywhere in the colony. But the distinctive feature of this part of the country is the Karroo bush. This is the most hardy herb, which can withstand the drouth in the Karroo.
most excellent food for which I will endeavor to find the proper, deep, reticulated carminic body which can be extracted in the meal of corn in the first process but find upon it I for few of the ears to crush on the hand a strong thyme-like odor is given off and is all too impossible that there is a certain definite anthracene influence all my coming to the inhalation of air laden with these carminic bodies. — The climate of this plateau has already been somewhat fully set out (see pp. 25-33.)

The principal health resorts here are:

- Motjesfortin 2,470 ft.
- Beaupré West 2,492 ft.
- Graef Rement 2,708 ft.
- Somers East 2,600 ft.
- Ibeddok 2,856 ft.

Motjesfortin (2,470 ft.) is a small village where some enterprise has been done in providing suitable accommodation for invalids. The climate is dry and basking very suitable for invalids. — Beaupré West (2,492 ft.) is also a favorite resort, especially beneficial
During the winter months the heat, in my first year, was so intense that I thought a walk in the mountains would cure me. During the summer months, the heat, in my first year, was so intense that I thought it advisable to seek a refuge in the mountains.

Kraalock, (2326 ft.), a town 180 miles north-west of Ngomba on the main line running between this post and Johannesburg, has a population of 664 inhabitants. It is one of the healthiest health resorts in South Africa. My eye was recommended by G. Moser Thompson for consumption and the eye. Though it is quite tree still some here, many find the heat in summer very trying, it may be advisable to seek the fresh air at some place some higher than the first heat such as Brawley (5250 ft.) on the Orange River Colony. Unfortunately, kraalock suffers from want of water. There are good hotels. I was informed that in the fronting accommodation for invalids. There are good hotels. I was informed that in

2
an unsatisfactory one, as a rule very difficult to get the farmers in the district to take patients. The town itself, like so many of the old Dutch towns, is built on a hollow basin so the heat is consequently very great in summer, but in the district all around the climate is ideal and hardly be excelled. Close by the town there is a thermal sulphur spring of some virtue in the treatment of rheumatism or ailments, effective or not, are being taken for the benefit of a sanatorium which will be a first-class establishment. The mild winters and the already stated sun and especially advantages.

a. Northern Plains Cape Colony.

Their part, the writer, well
for the inland side of which the Orange
River. The plain ranges from 2,000 ft
to 6,000 ft. The climate is very
similar to that of the Great Karoo Not-
only to the great altitude the altitudes
in men-affected. A summer heat of
110° F., and snow is not uncommon in winter.
During the day we wished the car to
remain standing or the whole day can be
spent outside - the chief town in the
provin. =
Tarkastad 4,300 ft.
Middelburg 4,895 ft.
Abardel rust 4,350 ft.
Barger's drps. 4,600 ft.
Dordrecht 5,500 ft.

Middelburg is the site chosen for the
largest military camp in South Africa - he
result is evident the health of the soldiers
here is excellent. But Middelburg is
fortunately a small town with
very little accommodation for invalids,
the general conditions are rather
mild and for most of the time suitable for
any sort of illness - the air is much
invigorating.

Abardel rust (4,350 ft.) is a former
town situated on the Long River.
Of late years Abardel has come round
as a health resort. The climate is an ideal one for the
convalescent. The accommodation
is good - better than in most
places in South Africa. A large hotel
scheme for the town has lately been
introduced with considerable success.
Then an hot summer springs (98°F.) near the town — this will have brought into town for us both in public and private better. Upon the proximity of the Orange River made it a magnificent — the town has some attractions. We went up country town can boast of.


In Natal, the coast lands are decidedly warmer than in Cape Colony. The average mean temperature at Durban is 77.8°F., compared with 69.4°F. at Port Elizabeth.

The town is a handsome town — though extremely hot in summer is a pleasant place of residence. The Berea which is the residential portion of the town is situated on a range of hills offering climate in general, equable and suburban. Important for it, combined with magnificent scenery all round nature is very pleasant.
place. I resided in the cool part of the year, from April to September, at the pleasure of the rest of the year. The rainfall averaged 2.9½ inches in May, June, and July, being the three driest months. From the coast, the land was quickly but irregularly by steps, none being more than 20 feet from the coast. It was highest on the north side of the island, and quiet, but pleasant. The harbor is a useful port in case of fogging up, or being suffered from tropical affections. The heat in summer is very marked. The town is named for a small village with an ideal climate - dry and invigorating. It is also remarkably free from dust, but unfortunately like so many desirable places in South America, the accommodation for the visitor is of the most desultory kind.
difficult to obtain.

The city of... (3,294 ft), New castle (3,890 ft), are both places useful in the treatment of
plains. The customs attaching to these
places make the bareness an interesting
tone to the spirit of such though the
bumps in themselves can be lost among the
first intrinsic beauty or interest.

6. Orange River Colony.

The Orange River Colony is a great plain some 50,000 miles
in extent with a level varying from
4,000 to 6,000 ft. above sea level. The climate
is magnificent even with all the defects
in sanitary arrangement to the death winds.

Though the Orange River Colony is a great plain practically continuous with the
first plains of the northern part of Cape Colony, it is separated from them by the
Orange River. The general aspect of the country
is different; the most striking feature of
the country is its great flatness. The Karroo
bush must occur at this level, but its
place is taken by a desert plant for the first three
following immediately warm rains. There
are no trees. The rainfall of the Orange
River Colony generally averages almost 2 in.,
but the rainfall of the Orange...
carried off by the wrong channel, which cut up the embankment in all directions, and has comparatively little retained for the benefit of the soil.

The mouth of the Orange River being now in an even better state, there is nothing more to be done than to construct a suitable dike. Unfortunately, the drawback to the same is the want of laborers, as the natives here are not accustomed to work under the same conditions as elsewhere in South Africa. To build the

town in follow.

Blomfontein (11,500 ft.)

This town is the capital of

The Orange River Colony has many fine

farms and a healthy wind for our purposes.

It is a contented town with a pleasant

atmosphere, both in town and country.

It is noted for its mild

climate.

Proceed straight from the
coast to Blomfontein. If he does so, he

will suffer from an apparent

malaise, especially in the direction

of weevil eggs, which are plentiful in

the

The climate is not, in general, at first

harsh, but as the weeks pass over

day by day the system adapts
Self to its new environment.
Ladybrand and Bethlehem
are small towns with
a humid climate.
Kroonstad (4,687 ft.)
This town has the
advantage of being situated in a valley
and one of the pleasantest for Must
orvans in the Orange Free Colony. But
a person born in the climate is
very thing that could be desired.
Harrismith (5,260 ft.)
It is the best known
health resort in South Africa. It has
an ideal climate that from May to
November the nights are apt to be very
cold. It is situated on the best
side of the slope of the Arahumba Range
mountains on the north, the snow lies on
the hills in winter, the only cold winds
are encountered. But in the summer the
weather is very delightful — comparatively
cool — and many invalids find they can
best gain their health by remaining
in Harrismith in summer. It is quite
suitable to the lower lands of Natal or
the Colony.

y. Transvaal.
The Transvaal lies between the Vaal River and the Limpopo River, originated north of the Orange River Colony. The Vaal River serves to separate the Transvaal from the Orange River Colony — from this river the lands rise till the water shed between the Vaal and Limpopo Rivers is reached, in the rich water sand where the most productive part of the gold reefs are situated. This water shed is situated some thirty-five miles south of Pretoria. On the northern side it stretches the country into hills, some forty miles distant. On the southerly side of the water shed the country is made up of rolling plains which stretch away to the valley of the Vaal River.

The climate of the Transvaal is healthy. Travelling here the winters are very cold, snow is sometimes met with, frost are common as night during a great part of the year. The danger of scurvy, failure at the healthiest times has already been dealt with. The climate is such that it requires a strong constitution not easily impaired.
by disease. Not the whole of the country lying north of the tropic of cancer is
very healthy - training in the cold
winter months has in the hot rainy season then a good deal of malaria.

The truth is that the regions least affected
found many suitable for the treatment of
rainbows. In the centre which has
opened up with much more like foothills,
during recent years dust is a constant
aggravating feature. The earth
of the dust has been enriched with seemingly
invincible properties. Epidemics of
pulmonary inflammation have frequently been
attributed to the dust, largely on
the account of its tendency to drift
into the air, unwholesome substances
from other parts of the valley on that
account nearly virulents tend to drift
there in search for work. A fair
propensity of these certainly so will
but always to understand
that there is a far risk. The
first fluctuation of temperature from frost
heat during the day to intense cold
at night is very trying on the em-

bored with the dust, the general
heat, the accommodation for invalids,
make the Transvaal a hazardous
shoal for the invalid.
Johannesburg, (5,679 ft.), with a
population of 180,000, is situated at a
higher level than any other town in the
Southern Hemisphere. In the summer it
is delightfully cool. Nevertheless, it
is not for invalids, it would be
a very suitable climate in many ways
for the invalid. Here in the
extreme day-night variation in temperature
my well marked, so that frequently
the thermometer will jump from
froziness in the morning to 100° F. in the
midday.
Heidelberg, (5,029 ft.), is a pleasant
little town lying on the south-east of
Franconia, and formerly a favorite resort
for visitors from Franconia or Bavaria.

Potschefboom, (44,100 ft.), is the old
capital having been founded in the
early days still planted with trees
which beautify the town or shade the
streets. Many caves of platinum do
still line the town with its
abundant water supply and abundant
forests of vegetation in a more pleasant
place I conclude than an "M.T.H."

An up-country town,
Barberton, (2,325 ft.), can only be
considered as a health resort for the
surrounding district. It is a mining
centre, formerly malaria was very
prevalent. It is no longer held
abundance, and the town is still very prevalent.

Throughout the home, malarial naturally
avoid the pure vales of the Transvaal;
indeed for them where malarial
affected any part of the Transvaal,
we used to find Central and Northern
plains should not to made place of
permanent residence.