Exercise in warm climates (Incomplete)

Publication/Creation

c.1890.

Persistent URL

https://wellcomecollection.org/works/c5dxu9sr

wellcome collection

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
https://wellcomecollection.org

~~Athletics in the Tropics~~ exercise Warm climates 89186

Name.	Age.	Address.	Disease.	Vol. and Page.

The subject of athletics in the tropics ~~or in other words exercise in the tropics~~ is one which concerns ~~the all [illegible] foreign resident within the~~ white ~~man~~ & woman ~~that~~ living ~~[illegible] the tropics the Europ in the East~~

All ~~white~~ Europeans men & women living in the tropics are individually concerned in the subject of ~~exercise~~ exercise in health. Not only ~~[illegible] the individual [illegible]~~ however dealing with ~~[illegible]~~ in their ~~[illegible]~~ subject, but ~~its~~ the effect upon ~~the~~ the progeny. ~~[illegible]~~ How to maintain health in other words how to live is the great question ever present in the minds of foreign residents in the tropics. In the first place who are the foreign residents the answer is simple & comprehensive ~~every~~ all white ~~man~~ person. No ~~white~~ indigenous man has been discovered in Equatorial regions & no white race ~~[illegible] capable of [illegible]~~ capable of ~~[illegible]~~ can make a home therein. A home means in its social sense a place wherein children

Name.	Age.	Address.	Disease.	Vol. and Page.

race ~~profession~~

can be reared ~~with~~ & the ~~race~~ continued with the maximum of climatic advantageous ~~success~~ for that race / The day may come when the white man will occupy the tropics, but it will only be when the ~~sun~~ earth has cooled down so that the colder regions cannot support him & the demand for heat & light compel ~~the~~ the him to bring his home nearer the region where the sun still ~~maintains a [illegible]~~ affords ~~[illegible]~~ the life giving essentials. In the mean time the white man maintains his racial home in ~~cold coast~~ the temperate climate ~~[illegible]~~ about half way between the tropics & poles & only sends forth ~~[illegible]~~ individuals or at most individual families to ~~carry on what he considers~~ obtain in the tropics what he considers essential for the welfare & maintenance of his existence. ~~The~~ It is the white man that came to the regions of the coloured man & not vice versa. The coloured man in other words the [illegible] in

Name.	Age.	Address.	Disease.	Vol. and Page.

the tropics have all they want, have all which the sun of the teeming earth can give. They have light heat & food & in consequence food in abundance, they have no need to wander to cooler regions ~~to obtain such~~ but the white man wants the products of the sun for his consumption hence his presence in equatorial regions. ~~[illegible]~~ He comes merely as a merchant to obtain light foods ~~[illegible]~~ (Rice, tea, coffee, cocoa, condiments ~~[illegible]~~ [illegible] chillie, ~~capsicum~~ cloves, tapioca, sago, arrowroot luxuries such as Tobacco & fruits ~~[illegible]~~ & last but not least) medicines ~~to restore him to health in~~ disease.

In his capacity as merchant he has to house his goods & protect them, hence he ~~[illegible]~~ seizes ~~[illegible]~~ a ~~[illegible]~~ purchases a piece of ground & brings ~~men~~ soldiers to defend ~~this~~ it.

This search after the fruits of the ~~[illegible]~~ equatorial earth is the meaning of our English colonies, although perhaps men's minds have ~~[illegible]~~ not brought home to them in these late days

Name.	Age.	Address.	Disease.	Vol. and Page.

Why do we hold Jamaica to obtain sugar. Why we hold a part of China to obtain tea & silk. What is the meaning of our large forts, such as Gibraltar, merely the guarding a passage for ships to carry food. To guard the stores soldiers & sailors are employed, the natives finding it advantageous to live alongside the white man for trade purposes, places himself under his jurisdiction for the time being, hence the machinery of law, with its courts of justice & its local government, police & the like. The key note of it all however is the search after food. When he obtains the food however he does not bring his people to consume it where he stays but sends it home to his racial home for the benefit of the people from which he sprang. He is merely an offshoot from the parent who has been sent forth to bring in the fruits of the Earth from many regions

5

Name.	Age.	Address	Disease.	Vol. and Page.

to maintain himself as best he may. It is this question of maintenance with which we have to do; it is the consideration of how ~~the~~ ~~[illegible]~~ ~~[illegible]~~ this messenger the provision agent is to be kept in the best health in a region of the Earth where it was not intended he should come where his racial continuance is an impossibility or ~~[illegible]~~ where he ~~can~~ or his family can only exist for a time. It is the provision agent that is the essential to keep in health. His removal means the ~~[illegible]~~ permanent of occupation of all the others. No need there for ~~[illegible]~~ regiments of soldiers ~~[illegible]~~ battle ships in regions where he is not. No need of foreign law courts, ~~or government official~~ ~~the [illegible]~~ ~~[illegible]~~ hotels, shops, fine houses, the like. These are mere accessories ~~following~~ to the one primary essential the man sent in search of food & clothing. In exchange this messenger brings the product of his ~~[illegible]~~ ~~[illegible]~~ own

Name.	Age.	Address	Disease.	Vol. and Page.

Can be then chiefly
& manufacture coal & iron, copper
foods. & heaters with the clothes man & t
attempts, &
substitutes & leaves him how to use them, but further in
new necessities in the art. Just as the prodigal
equatorial earth created new appetites for
the condiments fruits & fine raiment
in the resident in the more temperate climate.
The question therefore is how to maintain
the health of the white individual or the offspring of the European stock in tropical
region; the larger question of the race does not
arise for it is accepted as an axiom that
no spot in tropical regions can maintain
a white race.
In tropical regions however the individual European
can live for a time with comfort
& if not in greater comfort than at home.
Heat & light are lavishly provided for him &
if his animal flesh foods are of inferior
quality, & require less as the
continual fight to resist cold is in abeyance

Name.	Age.	Address	Disease.	Vol. and Page.

to the very fact that the heat lessens the necessity for the consumption of such. But here we start with difficulties. We are introducing to warm regions, where the eating of flesh by the inhabitants is at a minimum, an individual who consumes the maximum of animal food. We are introducing an individual of strong muscular propensities into regions where spontaneous muscular exertion is unknown where exercise as we understand it is never taken, where the daily scramble for food in any form is the stimulus for bodily exertion. In tropical countries the natives are divided into two distinct classes the labouring class, with whom muscular exertion is a necessity & the non labouring class merchants, scholars, rulers & the like by whom physical exercise is never practised, by whom it is considered derogatory to do muscular work or who [illegible] the field [illegible] of European [illegible]

Name.	Age.	Address	Disease.	Vol. and Page.

~~the complacent Smile of [illegible] amusement~~
regard ~~at~~ the uncalled for exertion of ~~[illegible]~~ Englishmen
at field sports with a surprised smile of complacent amusement. The Oriental asks why
do you this? does it bring you money? then
surely it is more agreeable to rest than
to work so hard in the hot sun. ~~[illegible]~~
~~no purpose. To~~ and what for, to knock
a stick down with a ball, to get a ball between
those two poles instead of the other two, to ~~[illegible]~~
climb that hill for no purpose, to swim to
yonder point when there is no occasion to.
(whether when you are not dirty ~~[illegible]~~)
where ~~[illegible]~~ is the pleasure, what is the good,
lying ~~sitting~~ down is more comfortable & I will try
to do these things when I am compelled to but
not otherwise. ~~The~~ What may be called
the upper and any rate the non-labouring
class in warm climates take no exercise. Exertion is
unnecessary, degrading & unpalatable.

Name.	Age.	Address.	Disease.	Vol. and Page.

~~Bitter~~ If it is the ~~work~~ duty of the poor man to labour for his bread ~~for those~~ other forms of expenditure of energy are unknown. Field sports are but the mad freaks of the Englishman regarded as a waste of time energy & strength. Nor is it possible to teach the Oriental mind ~~what~~ the reason for this exertion. One concrete example were sufficient. I mentioned a few days ago to an educated Oriental acquaintance that this being a public holiday I was going to climb a high hill in the neighbourhood. He asked in surprise tone, "What are you going to do up there?" What could I answer, I walked away feeling rather foolish I had no answer ready, there was such an enormous gap ~~and~~ between his estimate of exercise & mine that I felt that his children's children might be taught ~~that~~ but that beheld no acceptable

Name.	Age.	Address.	Disease.	Vol. and Page.

in his brain whereby to receive still less
to ~~[illegible]~~ think over the ~~[illegible]~~ statement I
made. "What was I going to do up there"?
~~Had I [illegible] I was getting health &~~
~~Exercise~~. Had I had ~~the~~ ready wit I ~~would~~
should have replied seeking health by ~~[illegible]~~
obtaining exercise; ~~[illegible]~~ expending muscular force
so as the more readily to change the structure
elements of my body; trying to stimulate
the various organs ~~of my body~~ so that their blood
supply may be quickened, that their function
may be increased & that the ~~[illegible]~~
waste products ~~[illegible]~~ accumulated
by the lethargy consequent on a long
tropical summer might be washed out
~~of my~~ by a ~~[illegible]~~ action some ~~[illegible]~~
vigorous stream of freshened blood. Would
my scientific friend have understood all
this? You are in good health ~~why do you~~ are you not
~~want to~~ be well wherefore undergo all this exertion

Name.	Age.	Address.	Disease.	Vol. and Page.

I did not know that that ~~Kasauli~~ mountain
yields better health than any other why not
try the lower hills & look for health there
Will it do you good to waste out, & lose to your,
system all the elements you speak of ~~[illegible]~~
is it not better to preserve them & strengthen
them by strong food I cannot see "what
you are gaining by going up there". Yes! &
until your ~~Oriental~~ mind can grasp
that my ~~O~~ Oriental friend you & your countryman will be
~~your~~ our inferior; instead of ~~your~~ our coming to
impose upon you & your country ~~conditions you may~~
~~be coming to~~ condition
granted to the conquered ~~the the the~~ the
reverse might have been the case. So long
as you neglect ~~your~~ the physique of your ~~non~~ laboring class, just so long ~~we~~
will we lord it over you. Your
laboring classes are ~~a~~ by the fault of their
exercise & food in physique if not better
than the laboring class in England at the present
day

athletics
in tropics

— 3

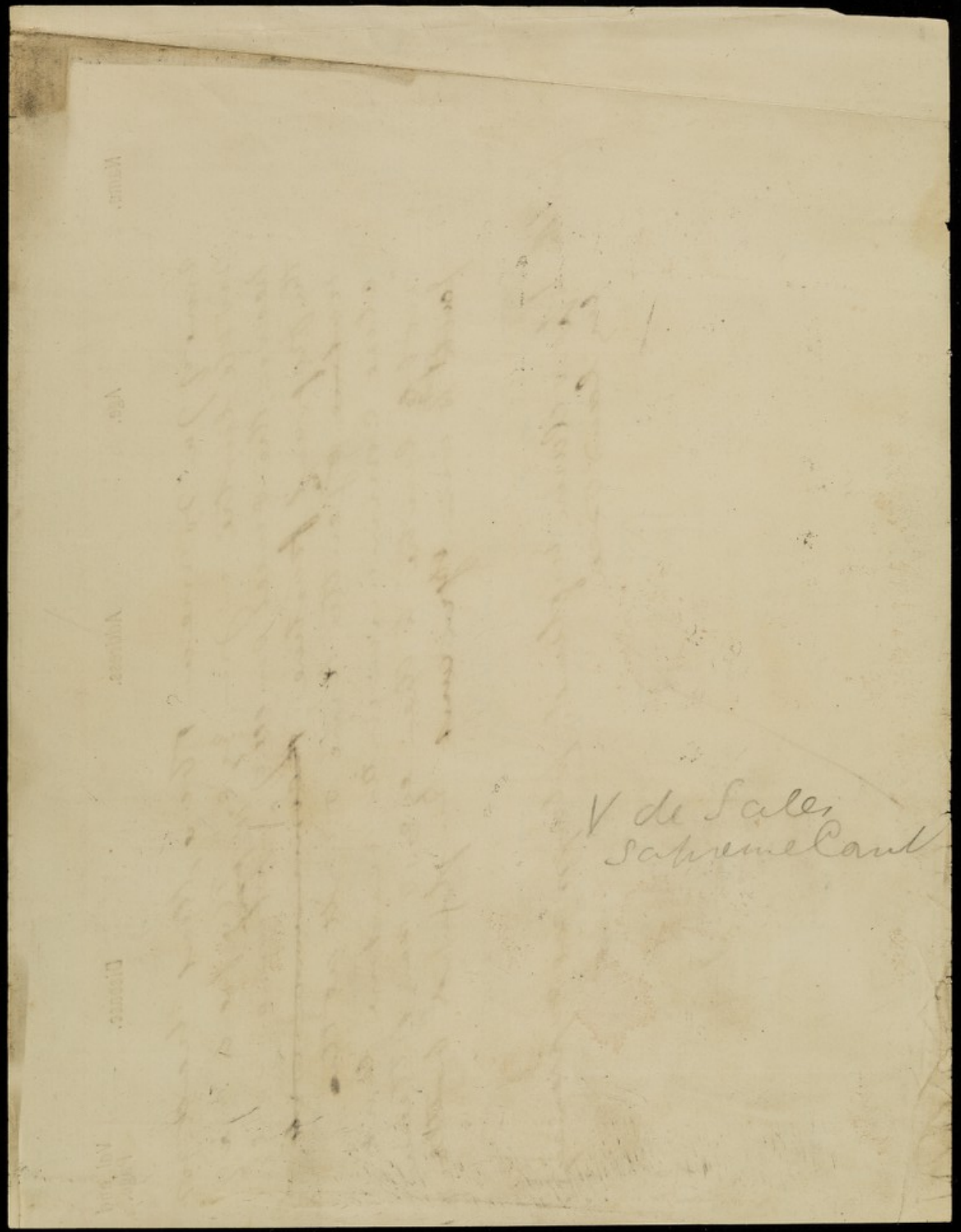
Name.	Age.	Address.	Disease.	Vol. and Page.

Working the mines, & ~~the~~ dwelling in big towns, now dwarf the physique of our labouring classes, the agricultural labourer is no longer the physical ~~back~~ bone of our country. America has caused ~~the~~ the damage to the physique of England. ~~[illegible]~~. She has laid barren her fields ~~[illegible]~~ by ruining the farmer & with the farmer disappears the only class to whom remained the privilege of the natural calling & one best adapted to man — namely tilling the soil. She has driven the "good ~~stout~~ yeoman whose limbs were ~~[illegible]~~ made in England" to burrow in the ~~ground~~ ~~mine~~ in the dank & unhealthy mine, to wallow in the back slums of festering iniquity ~~filth~~ of big towns or to leave his country, & to ~~take~~ show in alien countries "the mettle of his pasture". The day is gone ~~[illegible]~~ when it can ~~truth~~ truth be said "Let us swear that you are worth your breeding, which I doubt not; for there is

natural law

Name.	Age.	Address.	Disease.	Vol. and Page.

none of you so mean & base, that hath not
noble lustre in your eyes." The fresh air of
heaven, the sweet smell of ~~new~~ the upturned soil,
the fragrant pasture ~~[illegible] with~~
~~nature~~ & the gentle kine & with all the
close communion with nature lent
"noble lustre" to their eyes. & sent them
~~forth fit to win agriculture England's battles~~
to proclaim England's physical supremacy on the field
~~[illegible]~~
forth to proclaim England's physical supremacy
by land & sea


V de Sales
Sabremelant

Name.	Age.	Address.	Disease.	Vol. and Page.

Anaemia

No more however can we look for the stout yeoman breed. The ~~sweet~~ open air life is exchanged for the ~~heavily laden~~ choke damp of the mines & the impure air of cities, & the present day soldier ~~[illegible]~~ is the progeny of the town dweller & ~~[illegible]~~ ~~mainly the unsuccessful artisan~~, a man unfitted ~~unable~~ to ~~obtain~~ ~~to~~ for success in civil life, who ~~&~~ flies to the army as a refuge. What is the consequence ~~for a moment~~ ~~to~~ take the disease roll, & not the death roll, of ~~a~~ regiment stationed in India. It matters so little ~~[illegible]~~ where stationed, whether in the plains or the cities or on the heights & ~~you~~ one appreciates ~~what~~ at what cost of men's health ~~&~~ we hold India. It is a too fact that ¼ of every regiment is sick ~~[illegible]~~ in some form or other in whatever station they are & at whatever season of the year. At times even a higher rate prevails & from personal observation I know that even on the heights & in the winter season ⅓ of the Regiment ~~[illegible]~~ only could turn

Name.	Age.	Address.	Disease.	Vol. and Page.

out on a march past. ~~During such~~ Further that even with such mild endeavour ~~5~~ 60 men ~~instead~~ fell out physically unfit to undergo this fatigue. And this is not one Regiment but ~~an~~ a type ~~merely example~~ of many. Remember that these men are carefully cared for, are well housed & well fed; that epidemics are rare now-a-days, that changes of station are frequent travel made easy & medical supervision constant & skilled. Notwithstanding the disease roll is ~~heavy~~ enormous, the death roll heavy & invaliding home frequent. The difficulty of maintaining health in tropical regions is increased in campaigns ~~tenfold~~ a hundred fold. ~~Of the Corps of Marines who land~~. Of the men composing the Corps of Marines stationed at Suakin in 1883-84 ~~not one of the original those who~~ not one of the men who originally landed was present in the ranks at the end of 13 months death & invaliding was complete & the usual reliefs from home ~~supplanted the~~ took their place

Name.	Age.	Address.	Disease.	Vol. and Page.

~~Enough has been said to show the danger of life to the life of Europeans.~~

Nor is it different in the ~~French province~~ of Indo China French province. The extent & magnificence of the military hospital at Saigon testifies to the requirements of the service & the ~~overflowing~~ overflowing number of patients within ~~to~~ bring home the painful truths of the disease roll.

Enough has been said to show the extent disease affects Europeans in barrack life where everything modern sanitary science can do is done, ~~or those diseases is rife.~~ But I propose to deal ~~with~~ with life outside the barrack square & at once we ~~meet~~ meet with a different class of recruits. The recruiting ground is the middle class of Englishmen & Englishwomen. a totally ~~of~~ different standard & are happily almost untouched by the iron hand of modern physical slavery.

Name.	Age.	Address	Disease.	Vol. and Page.

A town dweller he may be but his children are well acquainted with ~~the~~ country life & ~~with~~ encouraged to take exercise. The wise ~~[illegible]~~ parent sends the children ~~to~~ out of town during the ~~[illegible]~~ period of growth & development. ~~[illegible]~~ As Waterloo was won in the play grounds of Eton & Harrow so now-a-days we have many Etons & Harrows. The play grounds which in 1875 might be counted by tens ~~[illegible]~~ are now, proportionally, in hundreds. Field sports are in the ascendant in England. Cricket was never more popular; foot ball matches, which 20 years ago was witnessed by a few shivering ~~[illegible]~~ onlookers, is now applauded by gatherings of 30000 people. I have written some years back things against foot ball & ~~[illegible]~~ declared they were not popular & never would be unless they changed their game. But in spite of my ~~[illegible]~~ prophetic warning the game has grown popular & neither frost nor snow

18

Name.	Age.	Address	Disease.	Vol. and Page.

of or wet deter its admirers from assembling. Rowing, Hunting, Riding ~~[illegible]~~ Cycling, tennis, hockey, golf, boxing & every known form of open air game is encouraged ~~[illegible]~~ & its champions ~~[illegible]~~ rewarded by winning national fame. It may be[that] we make too much of our physical heroes whose names become as household words; ~~but~~ it may [be that] we are hastening towards the level of the ~~[illegible]~~ Romans during the decline of the Empire when the gladiator was the ~~[illegible]~~ popular hero; it may be that the worship of our ~~[illegible]~~ present day actress, ~~[illegible]~~ ~~[illegible]~~ & the modern dancer & ~~the songs of the~~ & the music hall singer of doubtful & low class ditties, goes hand in hand with ~~this~~ intense ~~devotion~~ admiration of physical force. If so we are nearer ~~the~~ end of our supremacy [amongst nations] than we think for. The skirt dancer is elevated into a heroine, her picture is ~~drawn~~ in every journal & shop window ~~[illegible]~~ she is interviewed & her career made a matter of history. ~~[illegible]~~

Name.	Age.	Address	Disease.	Vol. and Page.

~~cutting~~ work of fetching being in a pig dragged from heaps

This poor piece of flesh & blood is made a Society fetish ~~plaything~~ is ~~paraded~~ in pictures, in newspapers, or magazines & is set up as a model! A model for what? I will ask you to answer the question ~~by yourselves~~ & whisper it to yourselves ~~in the deep dead of night~~ lest as soon as ~~& that~~ ~~& that~~ ~~neither~~ that the very walls may not hear ~~or~~ that ~~posterity~~ ~~relatives~~ our children may never ~~know~~ know ~~or learn to know~~ that this was the fodder of their parents' time. ~~Proof~~ ~~Proof~~ The fever the depravity of making too much of our physical champions. Ask the first twenty people you meet who Capt Webb was & who Lord Kelvin is & you will gather what I mean; Ask who is the champion cricketer & who the last Senior Wrangler. Our American cousins have 'elevated' freed as they call it their young ~~women~~ women. ~~Their~~ They are trying an experiment on a large scale; the time worn custom of bringing up the girl in a convent or by the rigid laws of straight laced spinster schoolmistress

Name.	Age.	Address	Disease.	Vol. and Page.

is laid aside & now they model their home & social life on what is pleasing & what is considered gallant by the girl in her teens. We all have our fetish i.e. if the American ~~[illegible]~~ towards the young female or the French, German towards the tricolour flag or English fatigue army for sport & if ~~that~~ the form is good upheld it practise it & encourage it. ~~But I would merely ask in conclusion is the adoration of the modern athlete for our national ~~[illegible]~~ good.~~ In short then what is the state of affairs we are introducing a resident of a temperate climate accustomed to a free meat diet & active muscular ~~[illegible]~~ voluntary exercise to a warm climate the inhabitants of which often meat in a ~~[illegible]~~ natural food & with whom exercise ~~[illegible]~~ is unknown. ~~In proceeding with the subject we will divide in to whether to proceed~~

Age. ~~[illegible]~~ A man coming to the tropics

Name.	Age.	Address.	Disease.	Vol. and Page.

in a warm climate a male is between
20 & 25. The nearer 25 he is the better
for his development.
The periods of life may be divided
in childhood up to 7.
Adolescence from the 7th to the 14th year.
Puberty ends with the 21st year
adult years up to 35 & maturity extends to the
45th year after that middle age.
The periods of life may be divided into.
1. Childhood which ends with the 7th year.
2. Adolescence covers the years between 7 & 14.
3. Puberty with its attendant changes & development ~~ends at the 21st year~~ occupies the years between 14 & 21
4. Adult life is the period between 21 & 35.
5. Maturity ends with the 45th year. Up to ~~which~~ this the Roman state regarded a man as young & serviceable in the ranks of regular army,

Name.	Age.	Address	Disease.	Vol. and Page.

§6. Middle age includes the years between 45 & 65.

7. Last ~~stage~~ of all ~~[illegible]~~ scene ~~[illegible]~~ extends from 65 onwards & ~~[illegible]~~ may or not be one of second childishness according to the ~~[illegible]~~ physical energy of the individual.

These periods are right but taken as the landmarks whereby to discuss this question & tho. we shall not any rate gain some knowledge by a study of them we shall dwell on their significance for a time.

~~[illegible] within the last 2 years~~ up to 25 years ago children were sent to work at the end of their 7th year. Now however the Education act has stepped in & extended the period ~~[illegible]~~ to the 14th year before a child can be taken from school. This ought to be a great gain physically but it has its

Name.	Age.	Address	Disease.	Vol. and Page.

drawback. Overpressure at school takes the place of the excessive physical strain which used to be the case in days before the act came into force. In former days ~~it~~ we were wont to overcrowd the professions dependent on the hand in modern days we overcrowd the professions dependent on the mind. It is possible to educate the body & the mind too much & health lies between the extremes. Rebellions used to be settled by ~~[illegible]~~ appeal to arms. Now a days they are fought out in political debates. Punishments at schools were inflicted by the cane & tawse & now a days by the writing of lines. The modern form of Irish rebellion is conducted ~~in the House of Commons~~ at the hustings, whereas previously, ~~[illegible]~~ armed insurrections were the methods employed. May not the healthy remedy lie ~~[illegible]~~ between the two, just as the excessive mental strain imposed on the young slaves to the school board system is as injurious to the national health as the condemned system of child labour.

Name.	Age.	Address	Disease.	Vol. and Page.

~~Lowilhorn~~:

The third period of life that between 14 & 21. is for the physical health ~~the~~ of ^any people the most important; it is the age which requires careful thought & handling & according to the discipline pursued will be the ~~future of the race~~ future of the race. ~~Among orientals People~~ ~~people living in warm climate the period is~~ ~~all people~~ In all climates ~~children~~ ^the youths belonging of the laboring classes are at this period of life engaged in manual labour but with the class above this what is usual termed the middle class there is a wide difference. At this period of life in ~~the tropic~~ warm climate the youth ceases the romping of games of childhood, two & the marriage is imposed upon him & ^all too early the responsibility of manhood ~~are all too early thrust upon him~~ ~~At~~ He is old 20, ^he has become a sedate & settled down member of the community ~~of~~ with the sprightliness of youth

Name.	Age.	Address	Disease.	Vol. and Page.

since the appetites satiated & ~~the [illegible]~~ hypertrophical exuberance
~~it were taken out of [illegible]~~. checked ~~[illegible]~~ or
thwarted. ~~[illegible]~~ An Indian or Chinese youth
of the middle class, between 14 & 21 is usually a pitiable
object ~~&~~ In China he is a student ~~and~~ pursuing
a course of so called education. His hours of
attendance at school is excessive, often from 6 or 7 a.m to
6 or 7 p.m. His work is monotonous in the
extreme, he devotes his days to acquiring an extensive knowledge of
characters & ~~[illegible]~~
getting up by heart the platitudes of some
ancient ~~[illegible]~~ philosophers, which must have been
& no doubt were wonderful proverbs 2 or 3000 years ~~at the~~
ago ~~[illegible]~~ but ~~[illegible]~~ unsuited to modern day requirements.
~~Knowledge is [illegible]~~ Education ~~[illegible]~~
~~[illegible]~~ is not the acquiring the power of
rehearsing texts, proverbs, maxims or doctrines.
~~[illegible]~~ The Chinese are merely instructed not
educated; ~~they~~ their schools are mere
guiding posts, they are not encouraged to think,

Name.	Age.	Address	Disease.	Vol. and Page.

& originality is ~~doubt~~ a terrible heterodoxy. Just as their brain mental calibre is wanting so is their physical development allowed to deteriorate. No field sports are known to them ~~tobacco & opium & their limbs are meagre through their development~~ & exercise of all kinds is ~~to~~ beneath them. ~~The middle class youth~~ The youth of the wealthier classes in China is generally a degenerate physical specimen. ~~I regard that in this~~ I regard this ~~Not those~~ ~~were it not that the~~ upper classes ~~in China were recruited from~~ below the

There is no permanent upper class in China the son of the poor man can by passing examinations ~~education~~ raise himself to the first rank. The son of the stout peasant race ~~[illegible], the rank~~ bring relief to the ranks of the upper classes. A permanent a physical aristocracy is impossible in China, ~~[illegible]~~ & is a mere peculiarity or is without perhaps if any intimate knowledge of the social constitution of the race that allows ~~the Chinese~~

Name.	Age.	Address.	Disease.	Vol. and Page.

a distinguished man in China to ennoble his ancestors only. ~~Just~~ Can we give the Chinese credit for such far sightedness, ~~that~~ as to be aware that a hereditary nobility is, on account of the upbringing of their youth, a physical impossibility.
Be that as it may a hereditary nobility is a physical impossibility in China no family can continue unto the fourth or fifth generation who neglect natures law as do the well to do Chinese ~~Therefore~~ No even a nobility but a continuance of their ~~[illegible]~~ better class a middle class is an impossibility without recruiting ~~from below~~ the family ranks from below by the adoption through marriage with ~~[illegible]~~ a less effete race
The presence or absence of a great middle class in any country ~~is~~ is to the true estimate of a nations

Name.	Age.	Address.	Disease.	Vol. and Page.

worth physical mentally morally or commercial. According to the numerical ratio of the middle to the upper ten & the labouring classes so is a nation to be estimated. ~~In~~ Amongst the ~~[illegible]~~ inhabitants of the tropics ~~the~~ a middle class is scarcely known; ~~[illegible]~~ & labourers is the ~~[illegible]~~ order of things. A Feudal system ~~[illegible]~~ obtains every where. In India since Britain interfered a middle class has sprung up. Merchants lawyers & Doctors & in time the ~~[illegible]~~ this new ~~[illegible]~~ class will be in ~~[illegible]~~ political front. In England ~~[illegible]~~ the middle class outshines in proportion that of all other European countries & daily its ~~[illegible]~~ numbers ~~being added to it~~, ~~the~~ extending & embracing the upper strata of ~~the~~ the masses. What constitutes ~~is~~ a middle class citizen. I would define him ~~it~~ as a man who can afford to ~~[illegible]~~

Name.	Age.	Address.	Disease.	Vol. and Page.

allow his ~~son~~ children to go on with their education after the 14th year. A point out. the school board demands attendance to the 14th year & to many if not most poor men the law is hard & harsh. But at the 14th year & onward to the 21st is the critical period of growth & development. an unhealthy occupation at such a time ruins the individual or his progeny & if ~~the~~ all the majority of the children ~~of the~~ were of this class the national health must suffer. But in England day-by-day the class is extending we have many miniature Etons & Harrows now-a-days. we have hundreds of play grounds where youths of 14 to 21 are daily exercising themselves. & if in 1815 we were fit to win one of the seven great battles of the world we ought ~~to be~~ today to more than hold our own in the field of battle. We have never had the necessity to tap our great middle class for the defence of our Island

Name.	Age.	Address.	Disease.	Vol. and Page.

except for officers; in ~~all~~ other nations all
classes are in the ranks; but in England it
is ~~chiefly~~ merely the children of the town artisan & the
is capable of holding his own with any European
troops, ~~but~~ should the day come however when
the middle classes are called upon to enlist
the real physique of the English people will ~~make~~
~~itself felt~~ be brought to the field of battle
~~Let~~ For example have you ever seen any of
the volunteer battalions in any of the large
towns in England. Have you ever seen the
London Rifle Brigade, the Artists, the London
Scottish, the London Irish, the Inns of Court,
the Queen's Westminster, the Queen's Edinburgh?
~~[illegible] if you have~~ ~~Finer Regiments~~ Finer men
capable, intelligent, well fed well clothed & well bred
full of the pluck acquired in the foot ball field
never put on uniform in any country.
These are but types of the middle class of English
under arms & I am prepared to say that

Name.	Age.	Address.	Disease.	Vol. and Page.

the middle class of English men. Generally the finest physique in the world at the present day. It is a recruit from this class that mostly come to the tropics & it is this specimen we have to deal with. A man (for he is 21) full of energy & life accustomed to a pure moist chill ~~&~~ a temperate climate & out of door games & sports. Now then to the problem how to advise him so that he may keep his health.

In temperate climates the amount of energy expended is computed thus

Visceral work	260	foot tons
Muscular work	300	" "
Heat	2800	" "
in all	3400	"

A foot ton or pound is the amount of energy expended in raising a ton or pound one foot off the ground.

The Visceral work is the amount of force put forth ~~[illegible]~~ by ~~[illegible]~~ the heart the movements of the lungs, the action of the brain, speech, mastication

Name.	Age.	Address.	Disease.	Vol. and Page.

in the region of the abdomen. The heart is the ~~main~~ main factor in the expenditure of this large amount. ~~[illegible]~~ ~~its [illegible]~~ To think that this small organ, for your heart is no bigger than your clenched fist, ~~[illegible]~~ every day ~~[illegible]~~ expends a force ~~[illegible]~~ sufficient to raise ~~[illegible]~~ 150 ~~[illegible]~~ tons one foot off the ground is perhaps the most wonderful ~~thing in all nature~~. Emblem of strength in small compass in all nature.

What is the proportion of visceral work in temperate climates such as England when the mean temperature is 48°.7 to that of a climate the mean temperature of which is ~~[illegible] very different~~.

In the first place we breathe 2 or 3 times a minute less frequently in the warmer climate than we do in the temperate. Every rise & fall of the chest expends. Now we breathe 14 to 15 times a minute in ~~[illegible]~~ warm weather and [illegible] 14.

Name.	Age.	Address	Disease.	Vol. and Page.

then 14 × 60 = 840 times a minute &
840 × 24. = 20160. times in 24 hours.
but the total amount of expenditure in health
is 100 foot tons
100 foot tons = 224,000 foot pounds.
~~[illegible]~~ as is about 224,000 is to 20160. as
1:11. i.e. 11 foot pounds is expended in
~~[illegible]~~ each breath but with the tissue is we
Consume 33 lbs a minute.
a 33 × 60 = 1980 an hour.
1980 × 24. = 47520 foot pounds = 21. foot tons
∴ the true amount expended in breathing alone
is 21 foot pounds ~~instead of~~ i.e. 79
instead of a 100.
But a lessened rate of breathing means a
lessened & proper [illegible] rate of work to the
heart ~~[illegible]~~ ∴ as 100 : 21 :: 150 : x. = 31 foot
or the amount of lessened heart work tons.
= 31 foot-tons ~~a~~ i.e. 150 − 31 = 119 tons.
the amount therefore of heart & lung work

Name.	Age.	Address.	Disease.	Vol. and Page.

Combined = 21 × 31. = 52 ~~lbs~~ foot tons
is out of a total of 260 = 208 is all that
is left to be accounted for. ~~Extraordinary~~
~~the~~ What becomes of this 52 foot tons
conserved by the visceral expenditure is it
given out ~~expended~~ by some other ~~form~~ means of ~~be~~ expenditure
we shall see.

2. The muscular work performed
by a man ~~at~~ ordinary manual work in a
temperate climate is 300 foot tons of energy.
This is of all the means of expending
force the most variable. The visceral
expenditure is involuntary the muscular
voluntary, & according as we expend too
much or too little so will our physique
be. The difference between the lady
who can afford to be delicate & the
work done by a bricklayer labourer
as to the amount of muscular energy
expended is enormous say 250 foot tons

Name.	Age.	Address	Disease.	Vol. and Page.

In walking a mile ~~17 ft~~ on the level over smooth ground 17 foot tons of energy is expended, over rough ground a good deal + up ~~hill~~ ~~to~~ over rough ground as in mountain climbing it may be trebled.

~~Supposing a a walker in an athletic performance had to walke at his compliment.~~

To expend the necessary amount of muscular force to meet the requirements of the body therefore one would have to walk 17 x 17¾ miles a day. At 4 miles an hour this would ~~be~~ necessitate walking 4½ hours. an amount of time which the 8 hour Labourer can afford but not by the average middle class citizen. But during the day ~~these~~ ~~many duties~~ ~~[illegible]~~ we expend force in many ways. ~~In~~ going

Name.	Age.	Address	Disease.	Vol. and Page.

up & down stairs, walking about ~~[illegible]~~ women in ~~[illegible]~~ at house hold duties.

~~Even the distance possible to cover ... with the~~

The amount of Energy expended in walking is calculated without reckoning the weight of clothes carried. A soldier's kit weighing 60 lbs. retards the progress enormously.

A mile walked on the weight [illegible] means an expenditure of 24.75 foot tons ~~a~~ mile. 12 miles is a full distance for a soldier in Flanders. If in addition the weather is hard windy wet or very hot ~~the [illegible]~~ it is well nigh impossible to get a regiment of soldiers of any country over more than 9 miles a day.

Again in long distance competitions such as those associated with Weston's

Name.	Age.	Address.	Disease.	Vol. and Page.

performance men walked continuously for 24 hours covering a distance of 120 miles & expending instead of the equivalent 300 foot tons 1800 foot tons of energy. ~~During~~ In the week (6 days) I have seen a pedestrian cover 520 miles, thereby expending an energy of ~~equal~~ represented by 7.800 foot tons. This is perhaps the greatest amount of energy ever expended by any animal in a given time. No horse can cover 500 miles a week it is only the ~~energy of man. that~~ will of man that can ~~compel~~ compel physical energy to that extent.

Why is it that going up hill tire so much. because we fix muscles for a supreme effort instead of breathing more we breathe less. & arrive at the top breathless & exhausted with hurried breathing & quickened pulse.

Name.	Age.	Address.	Disease.	Vol. and Page.

No what relation [illegible] walking
in a temperate climate of 45° F in
a tropical climate with a mean
temperature of say 80.
Immediately we begin to wear the
skin begins to act fully & there we must
turn aside to consider the effect of
evaporation ~~from the skin~~
3 The third ~~element amount~~ of expenditure
~~of heat~~ of force is the great way heat
~~of the 2840 foot tons left~~ & of the
3400 - 2840 tons left for the [illegible] purpose.
It is at once seen ~~that~~ that the main
[illegible] of heat is the great question
of the human body. The temp. of the
body at the tropics, in the temperate
climate or in the Arctic region has to
be is maintained at about 98.2.
Shortly, cold ~~[illegible]~~ air coming in contact
with the skin causes the ~~skin~~ skin to pale

Name.	Age.	Address.	Disease.	Vol. and Page.

i.e. The blood vessels of the skin contract & the blood sent to the skin is lessened in quantity; ~~heat~~ hot air ~~[illegible]~~ causes the blood vessels of the skin to ~~[illegible]~~ dilate i.e. more blood comes ~~[illegible]~~ to the surface of the body. ~~[illegible]~~ In cold ~~the~~ air the ~~[illegible]~~ skin does what it can to prevent the loss of heat; in warm weather it favours the loss. Still from the skin by radiation heat escapes at all times in cold climates it is received & conserved to the body by heavy clothes. In warm climates the clothing is at a minimum & the heat is allowed to escape. I assumed a temperature of 80 & a body temp: of 98½; but suppose the temperature 110°. how is it possible for the person to live the radiation of heat would be towards the body instead of from the body. But nature has provided a cooling surface ~~[illegible]~~ ~~as~~ the skin when

Name.	Age.	Address.	Disease.	Vol. and Page.

heated to a certain extent by breathing further by perspiration & were it not for this it would be impossible for human beings to live in very hot climates.

Suppose for a moment you check this evaporation as by sitting in a draught the skin pales, the blood vessels contract heat is prevented escaping the temperature of the body rises & impending sunstroke is the result.

How do we produce a less heat. in the tropics than we do in temperate climes. We would naturally say we require less to keep us warm because the air around us is warm therefore requiring less we produce less. But here again perspiration & evaporation comes in.

You are all familiar with the cooling

Name.	Age.	Address.	Disease.	Vol. and Page.

water by hanging up, in the air, a canvas bottle as they do in Australia or a goulah in Egypt & elsewhere. The ~~cold~~ cool bottle is hung in a current of air & the moisture from the bottle is carried off into the air leaving a cool surface beneath & therefore ~~cool~~ cool water.

Just so with the body. Evaporation from the surface is constant; & it is this cooling of the body by evaporation which is under consideration.

I may at once say I believe that the reason we get worn out pallid anaemic what is called &c. in the tropics is that we lose more heat by evaporation than we can make up. The difficulty I believe is the maintenance of body heat. Heat has few dangers in hot climates, the chief danger is catching chills, i.e. If as I hold we expend less on our visceral work

Name.	Age.	Address.	Disease.	Vol. and Page.

muscular work we consume therefore the expenditure of heat, & when then we do not balance this with precision. ~~the~~ Moreover our body temperature is constantly lower in the tropics than in temperate climates by about a degree. How is this brought about? by the giving off more heat.

It is peculiar that animals peculiar to hot climates such as the Hippopotamus the Elephant, Rhinoceros should have hides very leathery ~~[illegible]~~ non perspiring & from which heat cannot escape by evaporation. Also that the skin of the coloured races perspire less freely than those of northern races. Negroes perspire less freely than other people. In this way heat is conserved by preventing cooling evaporation but radiation is allowed for. In the case of the sheep with its thick woollen coat.

Name.	Age.	Address	Disease.	Vol. and Page.

heat is ~~[illegible]~~ conserved to the body as wool
is a bad conductor of heat but a great
absorber of water. The horse is an animal
which loses much by perspiration & is
accordingly delicate apt to catch chills
& cold & is not much used by dwellers
in the tropics as a beast of burden
If then we do not want to lose ~~much~~
~~heat from our bodies~~ the minimum of heat
& the maximum of water woollen clothing
is the material
~~For all this then let us learn [illegible] that our critical [illegible] 50 [illegible] on [illegible].~~

We ~~[illegible]~~ realise how our muscular
expenditure is modified in a warm
climate the moment we walk
the moisture is increased & we are
losing heat not only by radiation
as in a cooler climate but also by

Name.	Age.	Address	Disease.	Vol. and Page.

rapid loss of heat from the skin. Is it to be wondered at therefore that we get [illegible] than we have a double ~~[illegible]~~ loss [age] & [illegible] more heat [illegible] is so [illegible] that ~~[illegible]~~ our body temperature falls, in [illegible] of living in a cold climate, & we are [illegible] at a great disadvantage. ~~[illegible]~~ As such a value would I estimate this that I maintained that [the losses by] [illegible] [illegible] in warm climates.

// How comes it then that in the tropics & the Arctic regions, the loss of heat [to the European] is the great factor to dread. Such women seem better even when we consider the food taken. In Arctic regions the food required is chiefly carbon, oil & fat in the tropics rice is the staple diet.

Now although the European acclimatises easily in hot climates I am of opinion

Name.	Age.	Address.	Disease.	Vol. and Page.

There is but little alteration in diet.
We come to the tropics a flesh & vegetable
eater ~~animal~~ being & an alcohol consumer
& we presume the diet we bring with
us. I should be not be justified in adopting
in all respects the standard of the natives
& attempting to live as they [illegible]

Food — The food we want therefore is one
supplying the maximum of starch
material. Technically these starchy material
are called Carbo-hydrates as distinct
from the Albumen & fat.
Here is the composition of a piece of food meat

Water	Albuminate	Fat.	Carbohydrate
74.4	20.5	3.5	0
Rice			
10.	5.	.8	83.2

In rice therefore we have a diet in which
starchy material predominate
Starch when ingested is converted

Name.	Age.	Address.	Disease.	Vol. and Page.

in Sugar & the Sugar subsequently is
converted into Carbonic acid & alcohol.
it is this act of conversion that generates the
heat necessary; it is the rapid combustion
~~that causes the~~ that generates the energy.
The great disadvantage of meat as a
diet is the absence of starch. Meat
administers to the organic frame work
it serves as the basis to build up the economy
It supplies the nitrogen in food & is termed
the nitrogenous as opposed to the non nitrogenous
substances. This supply of nitrogen & the
store ~~in the~~ thereof in the body affords
a latent energy to the consumer, a staying power in fact not
~~supplied~~ met with in the more light
feeders. The starchy foods do not enter
into the composition of the body but
bathe the tissues & are ready for rapid
consumption.
Now there is no doubt we eat more

Name.	Age.	Address	Disease.	Vol. and Page.

meat
in the tropics than we do in temperate
climates. How & why is this. Food is taken
to supply loss heat what is the daily loss
we here sustain — heat. We ought then
to take plenty food to supply the loss. What
are the facts — we load up our dietary with
Fish, ~~ch~~ fowl. game & mutton & beef & curtail
our bread vegetable & starchy puddings. An old
tropical hand despises bread vegetables &
starchy puddings & he attempts to get out
of meat sufficient to supply the heat lost
to his body. ~~The~~ In consequence he wanders
through a long menu & consumes fish entree &
joint trying by excessive consumption to
make up the loss in heat. But whilst doing
this he must ingest by far too much
albumen or nitrogenous food & what is the
consequence. An over loaded liver dyspepsia
a disinclination for exercise shortness of breath
& discomfort around the heart.

Name.	Age.	Address.	Disease.	Vol. and Page.

What does this teach us that the diet must be more mixed that starchy materials must be supplied hence the curry & rice of the tropical man.
Now then about the curry & rice; we eat it at the end of meals; we have gone through the meat provided in the menu; we have attempted to supply the real loss by consuming meat & the course of rice comes in too late. It is taken as the bulky substance at the end of dinner instead of earlier; it is rather after we have attempted to supply it from our favourite meat & failing to we have to fall back on rice.
I believe we are in error by so doing & we ought to follow the native rather by laying the foundation with our curry & rice & consuming the less required foods afterwards.

Name.	Age.	Address.	Disease.	Vol. and Page.

Do not think however that dwellers in colder regions do not get starch in their food here is the component of oatmeal ~~maize~~ &c.

Water	Album	Fat	Starch
15 ~~P~~	12.5	5.6	63.

here is a more or less perfect food but it has to be consumed in great quantity to get the sufficient supply.

Bread takes the place of Rice in more temperate climates.

water	alb.	Fat	& Starch
40	8	1.5	49.2

it will be seen that Bread yields a little more than half the heat giving element than are given by Rice.

Training

Training whether in temperate or tropical climates aims at increasing the breathing power.

Name.	Age.	Address.	Disease.	Vol. and Page.

2/ making ~~the muscul muscles~~ muscular action more vigorous & enduring
3/ & lessen the amount of Fat.

The difficulty with the untrained is ~~the~~ that there is no concordant action between the heart & blood vessels, & the breathing.

The untrained walker runner rower &c gets out of breath quickly. & the object of all the training endeavours is to get a balance between the action of heart & lungs. A man out of training gets breathless his face becomes livid his pulse quickens beyond extent & becomes unsteady irregular or intermittent. Such a man cannot keep up long at any field sport; he gives in at rowing; his hand is unsteady at shooting he cannot make a big score at cricket & at Ball games such as Racquets, ~~Fives~~ fives & the like he speedily succumbs.

It is to obviate this that a man goes into

Name.	Age.	Address.	Disease.	Vol. and Page.

training. Now it matters not what. Most men to engage in the one essential exercise for all is that of walking. Even the rowing man must walk a certain distance daily or he gets stale & training off or it called

Now during walking we expend force in three ways
Visceral energy
Muscular —
Heat.
I do not propose to go into this question except from comparative point of view.
1. Visc—
2. Mus
3. Heat.

Nonchemical Food.

Name.	Age.	Address.	Disease.	Vol. and Page.

Varieties of Exercise
1. For development of muscles of the body generally
Rowing & football
2. ~~Lower limbs~~ Upper limbs
Gymnastics, - dumb bells, Indian clubs vaulting horse, horizontal bar, ~~[illegible]~~ trapeze rope & ladder climbing & the like
3. Lower limbs
Walking ~~[illegible]~~ running leaping racquets fives tennis & lacrosse
4. Right arm & leg. Fencing cricket (bowling) skittles bowls & quoits.
Now it is plain that the exercises which exercise the body general are the more perfect & where are devoted to one or to one form of exercise it is at the ~~[illegible]~~ of the neglect of other parts of the body so that the [illegible] man must walk the gymnastic performer must walk

Name.	Age.	Address.	Disease.	Vol. and Page.

The man who wishes to attain aims at fives must practise dumbbells. Now the amateur athlete in the interim must remember he is to train himself from a more lax state of muscular development than at home. Whether engaged in training at home he cannot in the interim leave off [illegible] running two to three weeks before the event if he wishes for success in the engage in any competition. His tissues are more lax; his heart is feebler; his lung capacity is less & it will take him longer time to correct all that. He has to work up from a much

Training
Breathing. Muscle. Fat
Varieties of Exercise.
Bringing a man from Temperate
to tropics - Character of natives
no exercise
Cultivating [illegible] no field sports.
Effects of Climate.
old idea. climate bad sanitation
now Trinidad & Barbados.
Race does not thrive
but here four [illegible]
in [illegible] 1 from.
Are we right in not following
natives
Why take exercise
Story. What are you going to
do in there
Three expenditures.
1 Visceral 260
2. Muscular 300
3. Heat 2840
3400.

Visceral work
1) 40 breathing
180 heart
40 further work of body
260.

Breathing less by 3 a minute
instead of 18 breathing 15.
3 x 60 = 180 x 24 = 4320 breaths a day.
But lungs also smaller
& in weight.
Vital capacity 318. in India
300 ∴ quantity is diminished
by 121.018 c.in: = 70 cubic feet
= 1/6 less than in Europe. about
∴ instead of 40 we are 6.6
to the bad
∴ exercise to prevent
I. waste of heat & warming of the chest
II. Digestion
2 Heart - 2½ less a min
& fainter as not having
so much to do ∴ 45 foot
tons less expended
What is the conclusion

Less food. yes but do 3
we take it; if not
why not.

3. Heat thro form of expenditure.

2840. normal temperature is maintained.
~~Done live much less~~
~~taste~~ food & clothing

In Tropics evaporation
effect of hot & cold air
cooling bottles

Body Temp. in Tropics naturally
lower. at [illegible] higher.
When we exercise less
the mechanical heat
& body heat by evaporate
after exercise temperature
very low.

~~Food~~. Consump.

	Alb.	Fat	Carbohydr.
Meat	20	3	0
Rice	5	·8	83.

Energy of Foods

1 oz. meat = 48
1 oz. ~~[illegible]~~ Rice = 126.

Rice quickly burned up
no [illegible] use oil
[illegible] oatmeal better
Alb. Fat & Carbohydrates
13 - 5 - 63.
In the ~~[illegible]~~ [illegible] Rice [illegible].
oil or ghee.

We attempt to get out of
meat [illegible] to supply
the ~~[illegible]~~ loss of heat
& cannot eat too much.

In training. lean meat
fat meat
[illegible]
[illegible] two days.

alcohol up to 25 none
up to 35. 1 oz. absolute
35 to 65. 2 oz.

<u>Tobacco</u>. <u>smoking</u> after training. better after dinner.

<u>Clothing</u>. <u>cotton</u> - conducts heat readily & non absorbent water

<u>wool</u>. conducts heat badly & water readily

<u>Time of Day</u>. noon low temp

Direct sunning. cause a nervous change in skin check perspiration & as our means of getting rid of heat is gone. body heat accumulates & the temp goes up. hence insolation.

6.

Walking

1 mile = 17 foot tons
with 60 lbs added = 24
want 300 a day = 18 miles.
up hill walking.

But in tropics. we breathe less frequently & in smaller amount. We therefore start a walk with less possibility of strength. We saw that the amount of breathe ~~it~~ actually less. ∴ our power of expenditure is less. But compensate in a way with ~~other~~ heat ∴ ~~[illegible]~~.
7 miles a day.

7 × 17 = 119 foot tons
is good average exercise for here
6 miles in summer
8½ in winter.

Weston. 120 miles = 1800

1500 miles in 6 days

Daily walk. Golf.

Classification

1) Effects on Muscles —:

General — Rowing, foot ball, swimming, Polo

Upper limbs & chest — Gymnastics — dumb bells. Indian clubs vaulting horse trapeze, horizontal bar, climbing ropes ladders &c

~~Lower limbs & chest — riding~~

Lower limbs — walking running jumping dancing ~~racquets~~ fives cricket

Lower limbs & Rightarm — Fencing skittles bowls Swords tennis racquets fives & bowling at cricket

Tropics. 1

Name.	Age.	Address	Disease.	Vol. and Page.

Training means →

Training
what it means.
1. Increased breathing
2. More vigorous muscular action.
3. Lessening the amount of Fat.

Examples untrained walker setting
breathless, pulse, livid face.
faint at rowing cricket &c &c.
Injury (heart, valves, lungs (engorged).

Variety

Variety of Exercise.
(4) 1. Body. Football. Rowing: Polo.
2. Upper limbs. Gymnastics golf
3. Lower limbs. Running &c. fives. racquet-tennis. Hunting
bicycling & tricycling lawn tennis
4. Right upper arm & lower limbs. Cricket fencing ~~Polo~~ skittles, bowls & quoits.

Not one perfect

Not one perfect first group best but the rowing man gets stale unless he walks.
The athlete in the tropics commences

Athlete in tropics starts with lower store of energy

from a lower standard. Must take longer time in training. Cannot ~~hope~~ to attain such perfection as in temperate climates ~~weather~~ &c. Further many reasons.

Name.	Age.	Address	Disease.	Vol. and Page.

Margin notes: Nature of importation — Character of natives — Field sports — Hill climb — what are you going to do up there — Effect of climate — Stimulant at first, lowering at last. — Malaria — bad effects chiefly bad Sanitation

Bringing in temperate climate man a meat eater an alcohol consumer & a man fond of voluntary muscular efforts i.e. field sports to a climate where natives are not so. ~~[illegible]~~ ~~class~~. ~~no~~ middle class English man come here middle class Chinese takes no exercise. are they right? let us see. inability in Chinese races inevitable their ancestors would not [illegible] coming [illegible] Effect on this northern man. Hence the lesson the evil influence on the individual it is reported whenever. At once I will say no the mere fact of living in a warm climate has not so much influence as believed. In old days going to India meant a grave almost. but it is not the fact of climate alone it is the sanitary surroundings; careless diet; of the uncleanness [illegible] food; ^private^ [illegible] drinking which gave warm climates a bad name.

Now in day improved sanitation in an old established possession like Trinidad & Barbados, render the British soldier death rate less than at home

3

Name.	Age.	Address	Disease.	Vol. and Page.

adult
Individual
no hard effect
extremes of age
[illegible]

Race

Custom of
natives
are we right
in not
following
them

Why take exercise
because of store
of force

of course that service may help. but it is chiefly knowing how to live.
For the race different. but for the individual not so deleterious as previously.
Are we right in breaking away from the rule observed by all orientals never take exercise unless compelled to.
Take the daily walk, the constitutional.
why should it be necessary for the european more than the natives — there are many reasons.
Total amount of force energy. 3400 foot tons. in the 24 hours

of this Visceral	=	260
Muscular	–	300
Heat		2840
		3400

Visceral work less. Breathing less rapid by 3 to a minute. Heart less active $2\frac{1}{2}$ beats a minute less & more feeble because heats less. we therefore expend less by 2 foot tons

Name. | Age. | Address. | Disease. | Vol. and Page.

Vi[illegible]work 260 foot tons

40 = ~~breathing~~ breathing

180 = Heart

40 = for other work of the body not muscular pain

260.

2260

3[illegible]60 – 180 × 24 = [illegible] 4320 a day

Breathe 32 cubic inches per minute

less quick 32 × 18 = 576 per minute Europe

32 × 15 = 380 — " — tropics

__But__ Lungs hold smaller amount post mortem

vital capacity 318 England – 300 India

∴ the quantity of air is diminished in bulk by 121.008 cubic inches = about 70 cubic feet in 24 hours = $\frac{1}{6}$ less [illegible].

∴ instead of 40 foot tons we have an expenditure of 6.6 foot tons less in our breathing power alone.

∴ exercise to prevent waste to promote digestion &c.

Name.	Age.	Address	Disease.	Vol. and Page.

∴ our Lung work is reduced more than
6.6 foot tons & we have to add 3 or 4
foot tons to the deficit scale in our health
daily 121.008 less. Call it 10 in all &
we are not far off the truth i.e. a ¼ less
work is called for in the lungs.
Consequence — diaphragm not moving &
effects on viscera — digestion.
∴ the necessity for exercise.
to keep the chest at what we were.
2/. The heart. — energy 180. — the rate is not
only diminished but the force. & a calculation
will show us a loss of 45 foot tons of energy
we are therefore ~~55 for~~ 10+45 = 55 foot
tons of energy is less required.
This would indicate that we require
less food but is it so.
I am afraid it is more food we take. heart.
Where then does the energy. Effects of want of Exercise on liver.
3. Heat. 2 of the 3400 — 2840 is for heat

2½ or 2⅓

Loss of 45 foot tons in expenditure
less food?

Heat
2840

Name.	Age.	Address	Disease.	Vol. and Page.

do we lose more or less heat in tropics than in Temperate?

Lost by Radiation & Evaporation.

made by food & chemical change within the body

Normal temp 98.5 — Norm. temp: 98.5 everywhere. Already although tropical residents are permanently warmer after first few months. Heat is then maintained

food & clothing (exercise, [illegible], mechanical heat) — the tendency regime. Clothes — artificial climate

Temperate region: moderate clothing

tropics: scant.

Tropics — But in tropics evaporation — cooling of skin.

Effect of hot air on skin (Effect of hot air & water on skin.)

cold " " " " " skin.

Cooling bottles — Cooling water in [illegible]. by Evaporation.

too rapid cooling checks perspiration & body heat rises. fever. Below punkah or

Cooling Draught — in draught when sweating

Cooling is more rapid than heat production ∴ we feel exhausted quickly.

But if more heat lost we have consumed 55 food & [illegible] from I & II. & compare a little

Name.	Age.	Address	Disease.	Vol. and Page.

Not enough. How can we supply the deficiency by food.

Food / Meat & Rice

Food of ~~temperate~~ & tropical men differ.

~~Meat~~.	Albuminates	Fat	Carbohydrates.
Meat	~~[illegible]~~ 20	3	0
Rice	5	·8	83.
Oatmeal	13	5	63
Bread	~~[illegible]~~ 8	1·5	73.

~~Meat no starch supplied by bread~~

Nitrogenous & Not nitrogenous

Difference between nitrogenous & non nitrogenous & their effects. Nitrogenous organic basis non nitrogenous heat giving & speedily consumed

Energy of Foods

Effects

~~1 oz albuminates = 173 foot tons~~
~~1 oz Fat = 378~~
~~1 oz Starch & sugar = 138 foot tons.~~

1 oz meat ~~[illegible]~~ = 48.
1 oz. Butter ~~[illegible]~~ = 344.
1 oz Rice = 126

Name.	Age.	Address	Disease.	Vol. and Page.

Rice & Curry) in tropics also oil & butter free

Athlete's food meat at first plenty. lighter foods more fat or time sugar at end fats & sugar plenty fruit and eggs twice before ~~alcohol~~ Tobacco

Clothing

We go on consuming quantities of meat 2 or 3 times a day to give us heat producing substances not getting it readily we eat more than we ought supplement with butter the form of Eskimo. We do have Rice & Curry but it is late in the meal. I would advocate its early arrival supply to the body first the food most wanted namely Rice & let other dishes follow. The athlete then who is training must know that what he has to guard against in the tropics is loss of heat. hence a number of things

1. Clothing. ~~[illegible]~~ Perspiring is most [illegible]
if not cotton linen or silk.
if perspiring flannel.
Cotton & linen clothing conduct heat readily is very non absorbent of water & when wet is the worst material possible in the tropics on the evaporation tendency to chill

Name.	Age.	Address.	Disease.	Vol. and Page.

"great" - get hollow prickly heat in the cotton clothes soaked in perspiration & a chill soon comes on.

Wool. is a bad conductor of heat & a great absorber of moisture. just what we want - we want to conserve the heat & absorb the water.

∴ all use wool in athletics & especially after when the ~~cooling~~ skin is all perspiring & the body temperature rapidly running down as it does.

Time of day

Time of day for exercise.

The great dread in the tropics is the direct rays of the sun. The Radiant heat on the body when intense causes a nervous change in the skin: ~~that of the~~ checks the perspiration; ~~and~~ the hot sun rays, thereby forming there full force on the body heat the body ~~[illegible]~~ which not being cooled by evaporation

Name.	Age.	Address.	Disease.	Vol. and Page.

Set hotter & irradiation in sun & hotter in the desert.
Exercise ought to be conducted as much as possible away from the direct sun rays. & the early morning or late afternoon is the best. Early morning has its faults – malaria &c. but they are exaggerated & it is likely familiar for want of food

1. Walking. Amount of energy. 17 foot tons a mile. but 300 foot tons to be expended by a man doing nothing else. = 18 miles. Other occupation 150 tons good am = 9 miles a day = 3 hours work. but in the desert with deficient long[?] power & the natural exhaustion following occupation 6 miles 3 out 3 back is sufficient.
Best time of day before the sun goes down & in the shade if possible. Set back from walk. then before dinner. so as to have a

Walking.

Name.	Age.	Address.	Disease.	Vol. and Page.

Walking expenditure of energy = 17 foot tons a mile
300 foot tons to be expended 18 miles to be walked
Breathing 32 cubic inches per breath =
home 32 × 18 = 576 per minute
(not walking week days or horse on Sunday)
two nis 32 × 15 = 380 per minute.
walking 1 mile expend 812 cubic/per minute
2 1320
3 2400
4 3260.

(which means that for 6 during the day we get through less air by 121.808 c.in = 70 cubic feet)

but lungs smaller. post mortem examination
Vital Capacity = 318 .. H.K. 300.
∴ the quantity of air is diminished in bulk
from both causes less necessity & less room
We therefore start a walk with less possibility of strength
but perspiration comes in as well losing
heat strength thereby ∴ the necessity being less the possibility
being less & the exhaustion more, we find 7 miles equivalent
to an expenditure of 7×17 = 119 = to 200 foot tons of energy.
Let that suffice the man who walks 6 miles
a day when temp ave: 80°.7 & 8½ a 9 miles in cool
weather has done sufficient

(1/6th less for every thing)

(The Daily Walk walking 120 miles = 1800 foot tons energy 800 ... a week)

soldier ... 60 lbs = 241 foot tons ... while walking