Mediterranean Gastric Remittent Fever.

It has been my fortune to see within the past two years three cases of the so-called Mediterranean Gastric Remittent Fever, which disease can, unfortunately, be so seldom studied in any of its phases in Britain. These cases were so well marked, so characteristic as to at once put them beyond that doubtful region which separates typhoid fever and its allies; if it had not been that the history revealed in each the probable, and might say the almost certain, source of the disease, the symptoms taken as a whole would have clearly pointed out some other poison - typhoid in character no doubt - yet distinctly something new than that which produces the ordinary typhoid fever. One is accustomed to find in Britain. Some of the symptoms, especially at the onset of the disease, showed indeed a very close affinity to Ptenic fever; others, however - as I hope to demonstrate - caused us at once to put Ptenic fever on one side, and forced us to look beyond, for some other disease which would agree with all the
anomalous symptoms presented by this disease. It is this very affinity to Typhoid fever which has caused so much confusion in describing this fever. Some persons boldly affirm that it is nothing more than Typhoid fever lingering and simple; others hold that it is distinctly "Malarious" in its origin yet akin to Typhoid; hence the name Typho-Malarious sometimes given to it; others again adhering to the belief that it is non-malarious, have considered it rather tending in its origin, with or without a Typhoid contamination. This latter view is perhaps best supported when we use the names "Rock fever" or "Gibraltar fever," for it is well known that there is very little accompanying vegetable matter present in Malaria or Gibraltar as is found in all truly malarious districts; yet Malta and Gibraltar are the chief centers of this Gastric Remittent fever. Whether we are justified in using the word "Remittent" in this connection, or not, leave for further consideration, as this can be best studied when we have gone fully into the cases of fever stating whether this fever can be considered as peculiar to the Mediterranean, or as merely an anomalous form of some other continued fever, of a typhoid nature. It must there be left, to a certain extent, an open question, as evidence on this point
is difficult to procure, and the literature on the
disease itself— as a separate disorder—is very
rarely being limited chiefly to Army Medical
Depots' reach like.

The disease begins minimally with a preliminary
stage of malaise, lassitude, and lassitude,
passing into weakness, debility. The patient
is febrile, depressed, restless, and incapable
of action. He suffers from chills, muscular
aches, headache, and anorexia; he sleeps
little, and what sleep he procures is fitful
sleeping, and disturbed; he shows in fact
all the symptoms common to the febrile
condition. The early symptoms can very
rarely indeed be observed in England, as do
the patient reaches as his disease has usually
developed into its more marked form.

I will best describe the further state of things by
narrating the cases which came under my own
observation, and on which I made some notes
at the time.

Case I. Mr. P, a passenger on one of her
majesty's troop ships, spent one day at
Gibraltar, sleeping at night on board. Some
few days after the ship sailed for Portsmouth
Mr. P began to complain of malaise, indigestion,
headache, and feverishness. These symptoms
increased in severity until the vessel reached
March 1885

Case I

Chart I

Mediterranean Fever

Date
30th 31st 1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th

Day of Disease
Temp. F.
6th 7th 8th 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th 20th 21st 22nd 23rd 24th 25th 26th 27th


108° 107° 106° 105° 104° 103° 102° 101° 100° 99° 98° 97° 96° 95° 94° 93° 92° 91° 90° 89° 88° 87° 86°
Plymouth (on the 30th May 1863), when the
patient was removed. On this day—the Birth
of her indisposition—she was found to be very
febrile, her temperature being 103.5. She
complained of great thirst, nausea, loss of
appetite, and intense languor. Her tongue was
colored with a whitish film, the lips reddened.
The bowels were obstinately confined. There was
a slight fulness and tenerness on pressure in
the right side region, no chill to be taken.
There was however marked tenderness over the
epigastrium, as is generally the found in all
good examples of this disease. The hepatic,
and splenic dulness were slightly increased
in area; this increase in size becoming more
marked as the case progressed. There were
no subjective pulmonary symptoms. Though
a slight hacking cough was present. Mucous
pelasus was small in quantity, high Colored,
rich in mucus, acid in reaction, with no trace
of albumin. Specific gravity 1025. In the evening
the temperature had fallen to 102.6 (see temperature
chart no. 2). For the next eight days the temperature
varied irregularly from 99° to 102.6, these were
no regular evening exacerbations; for though the
fever often increased towards afternoon, yet this
was by no means the invariable rule, as we
found in typhoid fever. Frequently the temperature
would fall towards evening having been about 100. From thence the illness it showed marks of tendency towards exacerbations quite irrespective of any hour of the day or night. This point I lay much stress on as being the key-note in rejecting the erroneous statement, that this disease is merely potassic fever. A glance at the temperature charts i., ii., iii. in the case of i. in Case II (page 8 and 9) will I think bear out my view and will go far in corroborating my statement. On the 8th of April - the 13th day of the disease - the temperature reached 103°, patient's mind was quite clear, she suffered from delirium, but she was extremely depressed, sleepless, and irritable, her towels were covered, and there was a great tendency to profuse perspiration. On this day the first attempt at medicinal treatment was made, 5 grains of the alkaloid of quinine being administered every four hours, this had but very little response, as will be seen by the chart. In fact, all through the illness medicines to lower the temperature proved of little avail. About this time and until the fever left the patient the temperature showed very great fluctuation, rising and falling rapidly and irregularly. Recently it would fall to 99° or even lower only to rise again in a few hours.
to 102° or more, the cause the symptoms to develop with renewed energy. On May 5th, the 44th day of fever slight jaundice was noticed. Patient was very weak, and had lost much flesh. Her tongue was Companions, clean, but she complained of great headache of frequent shivers. Her temperature still fluctuated. Gradually the jaundice became deeper, the urine became stained with tannin, clay-colored. On the 15th of May Dr. William Thomas saw the patient, had seven years of a hepatic abscess, there being great tenderness over the right side of the abdomen. The temperature behaving in such a manner as to give one the impression that some acute inflammatory mischief was taking place. This fear happily proved groundless, and gradually the jaundice disappeared, the tenderness over the liver slowly passed away, and the stools regained their healthy appearance. The temperature still continued its irregular course, but gradually reached a lower level, being frequently normal (occasionally subnormal), and the urine never reaching above 1010. As the jaundice subsided, rheumatism developed and became a most painful complication. The rheumatic fever appeared to be concentrated in the muscular and fibrous structures, and the pain seemed frequently
the rather rheumatic in character than truly rheumatic. The joints were unaffected. Patient became even more feeble than before, the pain telling greatly on her much tried strength, and producing very real distress. She differed from Colvin's dilatation, especially during the night. By degrees the rheumatism lost its acute form, and after lingering for several days left the patient completely. All during this latter complication the temperature retained its former peculiarity, fluctuating considerably and falling suddenly when least expected. For example let me give my sufferings on May 21st, the 59th day of fever: "Temperature 1 a.m. 100.2, 10 a.m. 99°, 1 p.m. 102.5, 8 p.m. 101.2, 12 midnight 100.2." Again on the 25th of the same month I find that at 9 a.m. the temperature was 98°, at noon it was 100.2, and at 9 p.m. it was as low as 97°. After the rheumatic attack my patient improved most favorably. Pain diminished, strength fast; the appetite improved vastly, and in fact she was considered convalescent as her temperature had fallen to the normal standard and all her bad symptoms had disappeared. She enjoyed daily drives in the open air, and was improving rapidly. When quite unexpectedly swelling appeared at the right ankle, and pain in
and near the groin of the same side was complained of, the swelling rapidly increased and extended up the leg and thigh. A hard mass could be distinctly made out in the position of the saphenous opening, evidently due to a clot in the saphena vein; and the whole limb was very much swollen and very tense. The leg remained swollen and very painful for some time, but gradually the clot disappeared, and the limb regained its normal condition, the edema being absorbed very slowly and leaving the leg weak and for a long time partially useless. All through the various throes of the general condition of the patient was good, her appetite very fair, and considering her long illness, and necessary motion on account of her leg, she appeared remarkably well. When the thrombosis yielded all went well, a rapid recovery was made, and there was no return of the fever, or any of the complications.

Case II. This case so closely resembles the foregoing, that it is well to treat it as fully here be a mere repetition. The patient, a Mr. Q—, passed through the Mediterranean on board a troop ship on her way home, and like Mr. P—, in my first case, developed her symptoms a few days before her arrival at
Plymouth. Two days previous to the feverish symptoms showing themselves, she was delivered of a child (full term); this event necessarily complicated the diagnosis, as her temperature was 103.1° on the 3rd day after her confinement, and naturally grave fears were experienced that she was suffering from Periperal Fever, especially as the chlorosis became somewhat offensive, as a considerable amount of tympany was present. Swage diarrhoea was present for a day or two, but was soon replaced by a condition of obstinate constipation. By the time she reached Plymouth - on the 18th December, 1884 - the tympanyitis had quite subsided, the temperature had fallen to the normal.

After the removal of the patient from the ship (on the 18th), and a careful examination of her symptoms, it was decided to the conclusion that she was not suffering from Periperal Leptamicia, but rather from the Mediterranean Pasteur Remittent Fever; this diagnosis was quite confirmed by the subsequent course of the illness. At 3 a.m. on the 19th she had a very severe fit, the temperature suddenly rose to 103°, during the day it gradually fell, and at 9 p.m. it was 102.4°. For the next few days the temperature fluctuations between 101.6, and 105.3, with high point was reached at 9 a.m.
January 1885

Case II.  Chart II.  M. E.

Date Jan. 1st.  2nd.  3rd.  4th.  5th.  6th.  7th.  8th.  9th.  10th.  11th.  12th.  13th.  14th.  15th.  16th.  17th.  18th.  19th.  20th.  21st.  22nd.  23rd.  24th.  25th.  26th.  27th.  28th.  29th.  30th.  31st.  32nd.  33rd.  34th.  35th.

Day of Disease/Temp. F.

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108°  107°  106°  105°  104°  103°  102°  101°  100°  99°  98°  97°  96°  95°  94°
on the 24th of December, the 13th day of the fever. Such a high temperature was fortunately but long maintained for by midday it had fallen to 103, by 9 o'clock the same evening it was 100.4, by 9 next morning it was 98.2 (see Chart I. Case III). For the following three weeks the thermometric chart showed great fluctuation, the temperature rising, and falling rapidly, yet in a way most characteristic of this fever.

On the 14th January (1885), the 34th day of fever, there was an extremely sudden exacerbation of the fever; at 9 a.m. the temperature was abnormal, being 96.9, at 12 p.m. it was 105, at 10 p.m. 103°, and at 9 o'clock next morning 96° (see Chart I. Case III). For six days after this most extraordinary exacerbation the temperature was abnormal, never once reaching 98.4, but being on two occasions as low as 95.2. On the 21st of January the 41st day of illness the temperature reached the normal point, from that day it ceased to fluctuate. From the above chart it will be seen that the fever lasted from December 12th, 1884, to nearly the end of January 1885; that the temperature showed very great fluctuations, and exacerbations, even more than were to be observed in Case I. Throughout the illness the stomach symptoms were well marked, and pain was complained of when light famine was
made over the hypogastrum; there was no gurgling in the right flank region, rectus were any thirst to be seen. Intermittent constipation prevailed through out the disease, and there was marked anaemia, with profuse night sweats. About the 6th January, rheumatic pains were complained of, continued for some time, culminating in a severe attack of intermittent remittent. This painful affection lasted for several days, but yielded at last to counter irritation. As the case progressed jaundice developed and became a rather well-marked complication, whilst tenderness over the region of the liver showed itself, and the stools became clay-colored. Shortly the jaundice passed away and the stools resumed their natural color, though constipation still prevailed, caused much discomfort. The patient made an excellent recovery after about 60 days or fever.

Case III. This third case cannot be considered a complete one by any means, in fact, it bears upon its a delirium of the Mediterranean Febrile Remittent Fever, than as a complete case itself. The patient, a young married lady, had suffered from a long attack of this fever at Malta, was sent home for change. Very soon after her arrival in Ireland her former symptoms showed themselves again, and her
temperature fluctuated between 99° and 108° in the manner characteristic of this disease. The same distressing symptoms prevailed in the former cases were to be observed, such as Anacolia, anaesthesia, severe short breathings, and severe frontal headache. The fever lasted for about a month. Then completely left the patient, who remained debilitated for some time, suffered a great deal from rheumatic neuralgic symptoms. Gradually however these passed away and he made a complete recovery.

Putting on one side Case II as incomplete, the other two cases given will be found to be more or less typical, and to bring out the main features of this somewhat obscure disorder. There are however cases recorded varying greatly from this typical form; for instance of the fever being so slight as to cause merely malaise, and dysesthetic symptoms, and still incapacitating the patient from his work. Such a case is frequently not diagnosed as one of the fever at all, but is rather treated as one of dyspepsia or gastric catarrh. On the other hand however, cases occur in which the symptoms are exceedingly severe, and in which a condition may be produced very
closely analogous to the West Indian Yellow Fever. A case of this type usually terminates fatally, and although, on account of its rapid progress, it cannot be met with in England, yet to bring the point out clearly I quote the following Case given by Surgeon J. D. Harrower M.D., F.R.A. in his Report on "Fever" in the Army Medical report for 1861 page 573. A gunner in the Royal Artillery stationed in the muddy part of the Great Harbour at Malta; 10 days afterwards he took fever and was admitted into hospital. "The symptoms were slight at the commencement; his illness lasted nine days. On the third day he complained of great frontal headache; his pulse (full) was 90; constipation and some vomiting were present. The last symptom (vomiting) increased and became urgent until the ultimately the matter vomited was ejected in an arched direction with little or no movement or uneasiness. The skin became lemon yellow from jaundice; the conjunctivae also were yellow and at the same time much injected. . . . About 20 hours before death the vomited matter was dark, resembling a mixture of blood and water . . . . Hemorrhage from the nose, mucous membrane of the mouth and gums, with fine pinpoint spots upon the abdomen occurred; great restlessness and delirium set in with incessant hicoughs. The urine, which was nearly quite
Repressed was highly albuminous. From this state he passed into coma, with the long, slow, sighing breathing seen in cholera dysentery. The motions passed were dark and melanic, looking.

I offer no apology for getting the above so fully, as to my mind, it brings out an important point, viz: the easy transition there is between the febrile Remittent fever of the Mediterranean, and that so-called "Bilious Fever" of which the deadly Yellow Fever is the type. What relation these two classes of fevers bear to each other is difficult to explain, at least with any hope of certainty; but one is almost forced to believe that there is some bond of relation between them, for the last case quoted very closely approaches Yellow fever proper, and yet it is really Mediterranean fever with its gastric and hepatic symptoms most strongly marked, as evidenced by the suffuse "black vomit," and the intense jaundice. Can it be the Malarious element that is the bond of union?

Let us return however to the Mediterranean fever as it is to be found in England, and in so doing it will be as well to recapitulate the leading points in the Symptoms, and to treat the Complications shortly. The long duration of the fever is perhaps its most striking feature, for one finds it dragging on its weary way for
weeks and even months, with admissions it is true, but there of the least vague, uncertain, and irregular character possible; lasting perhaps for a few hours only or may be a day or two at the most. The duration of these fevers is uncertain, a few cases beside in three or four weeks, but the majority are much more protracted, some lasting even as long as 20 to 25 weeks. Relapses are frequent and severe.

The second point which I wish to draw attention to, is the peculiarly irregular temperature which characterizes Mediterranean Plague Remittent fever. The fluctuations are most surprising in their suddenness, and range from 99° at 9 a.m., 103° at noon, and perhaps 106° at 2 p.m., and this erratic temperature 10° lasting for a day or two but continuing for weeks together. The fluctuations seem to be bound down by no law, but pursue their own course in a manner at once astonishing and alarming; and as before stated with no real relation to any hour of the day. There is evidently a marked tendency for the temperature to rise suddenly at any hour of the day or night, and frequently when least expected. As to the really all fevers whatever be the cause, there is a certain inclination for the temperature (rise towards afternoon and evening, as in Mediterranean Plague Remittent.
Fever we may find this tendency occasionally showing itself. This evening recession is, however, by no means a regular rule, as very frequently the temperature falls most markedly as the evening approaches, and often a lower point is reached at night fall than has occurred all day. This thermometric peculiarity was particularly noticeable in Case II, especially between the eleventh and twentieth day of the fever (see Chart I, Case II on page 9). How very different is this peculiarity to the certain and definite course of an ordinary case of typhoid fever!... There is no crisis in this fever, but rather a very gradual lyisis. The temperature falls slowly towards the close of the disease, but as it falls it keeps up its old character, and still shows marked irregularity in its remissions and sudden recurrences.

With regard to the temperature, there is one fine point which I wish to draw attention to, and that is the great tendency this ordinarily feverish fever to become subnormal towards the close of the fever. This can be at once seen by a glance at the charts, especially Number IV of Case II, where a temperature below 97° frequently occurred and one as low as 95.2° occurs twice.

Next let us turn to the symptoms due to derangements of the Alimentary Canal. Dyspeptic symptoms
are in all cases well marked, even before the
fever shows itself. These symptoms are frequently
the cause of the patient seeking advice, unaware
that they are but the forerunners of this most
troublesome disorder. The bowels are irregular,
the patient suffers from nausea, and acid
secretations; he is weak, and low spirited, and
has a great repugnance for food. After the
fear is established the dyspeptic symptoms become
ever more marked, thus: nausea, vomiting;
Great pain and uneasiness after food, with
tenderness in the epigastric region. The bowels
are sometimes irregular, usually obstinately
Enfaced. The stools are usually clay-colored and
dark, and very offensive. When jaundice is present
they become clay colored and may be putty-like
in Consistency. There is no pain in the right
liver region, nor can any jaundice be elicited
by pressure. The tongue is usually flatly flatly
reddened. Edges, and the mucous coated with a
Yellowish white fur. Sometimes very thin, at
other times, thick and heavy. The tonsils, and
Pharynx are frequently infected, and red.
The liver and spleen are much affected in
this fever, both being more or less enlarged.
Jaundice is very frequently met with, but should
rarely be considered as a complication than a
usual symptom of an ordinary attack of
Mediterranean Remittent Fever. The functions
of all the blood-forming glands seem more
or less disturbed and prevented, resulting in
very marked destruction of blood cells, and
profound anemia.

The kidneys seem to be but slightly affected.
The urine—as would be expected in any high
fever—is scanty, concentrated, and rich in
cretes. The amount of urine is increased.
The specific gravity is usually about 1025.
No albumin as a rule is to be found, unless
the case passes into one of the so-called "Bilious"
type, in which the urine is highly albuminous;
and the kidneys much affected. Bile acids,
and salts can be frequently detected, and when
jaundice is established the bile-colouring matter
becomes most evident, giving to the urine the
characteristic yellowish green appearance.

Pulmonary symptoms, of any importance, are
very rarely present, and Pneumonia as a
complication is rare indeed.

Lastly there are very few, if any, nervous head
symptoms; there is little or no delirium. Except
perhaps in the very severe cases already alluded
to. Mental depression is a frequent symptom,
and here is always marked depression of
spirits throughout the disease.

Such are the main symptoms of an ordinary
Case of Mediterranean Gastro Enteral Fever.

Let us turn to the Considerations of the

Chief and most Common Complications

These I observed were

1. Rheumatism - chiefly muscular and fibrous.
2. Neuralgia - frequently intestinal.
3. Jaundice.
4. Venous thrombosis.

Simpson Marion in his paper already referred to in the Army Medical Report for 1861, mentions on page 367 "Rheumatism as a Common Complication. "Rheumatic in character probably of the lower limbs, may lead to reference.

1. Rheumatism, as a complication of the fever, is generally severe, keeping as a rule to the muscular and fibrous structures. It is felt in the thighs, calves of the legs, loin, and in fact in all the fleshy parts of the body. The pain is great and often persisting; and a marked point is the absence of all local lesions to account for its great pain and discomfort.

The great swelling of the joints, and the tendency to peri and retrocardial inflammation, so seen in ordinary acute Rheumatism, are wanting. This complication usually disappears towards the close of the fever.

2. Neuralgia which frequently occurs in the course of the disease is so closely allied to the
Having that it is often difficult to separate it. It usually presents itself in the form of Intercostal Neuralgia; however, and it is often most obstinate, it is relieved with difficulty. Sciatica I believe also latches a common form, but was not to be observed in the cases before us.

3. Jaundice have already alluded to. It was present in two of my three cases, and produced all the usual phenomena, such as yellowness of the skin and conjunctivae, intolerable irritation of the skin, light-colored and bile-brained urine, clay-colored stools, frequent urination, and a weak irritable condition of the heart. This complication usually comes on rather late in the disease. The reason for which I shall return to point out later on.

4. Venous thrombosis occurred in Case 1, and became a most troublesome complication, especially as it became on at the very close of the fever, and compelled the patient again to the bed. The symptoms produced were such as one invariably finds when there is obstruction in one of the main venous trunks, viz.: Stagnation of the blood current, venous dilatation, impaired hyperemia, extravasation of blood, canker, deep seat swelling of the part affected and complete temporary loss of power.
What is the cause of this Mediterranean
Gastric Remittent Fever, and what produces
these phenomena we class as symptoms and
complications?
Here we have a most difficult question to pass,
and one which years must be left to some distant
discovery. The whole course of the disease shows
us that it is caused by a severe, and at the same
time long-lived poison, which is taken up by the
body, and which evidently finds in it a suitable
habitat for its development, and growth; that
this poison, whatever may be its nature, after a
certain time is very slowly, and gradually
eliminated from the blood; and that during its
elimination, still acting as a poison, it destroys
the several organs, and structures with which
it comes in contact, and produces in them changes
which cause the symptoms we classify as
complications. This is particularly well seen
in the brain, and muscles; the poison circulating
through these structures is taken up by them, and
at once acts deleteriously on them, causing
perversion of function in the one, hence palsy,
and producing rheumatism, and pain in the
other. This poison in the blood causes great
haemorrhage among the blood corpuscles, and brings
about changes in the spleen and other blood-forming
organs, producing, in doubt, the profound

anemia which invariably accompanies this disease. The destruction of the blood cells is very great, greater probably than could be accomplished by the high temperature alone, by continued fever of 38° to 39°. The reason for the long continuance of the fever is to be found in the great vitality, and the very slow elimination of the poison. The high temperature is produced by the irritating action of the poison on the nerve centres, specially on those of the sympathetic and vagi; its characteristic irregularity is probably caused by the peculiarity of the poison and its development. Though this latter point must necessarily be shrouded in obscurity, yet it seems to us as if the virus of this disease (whatever that virus may be) develops, as it were, by fits and starts causing waves of intensity of poison to circulate through the blood, and so stimulates the sympathetic at irregular times, and in this way produces those strange exacerbations and irregular remissions seen in this complex disorder. Great demoralization is produced by the deleterious effect of the poison acting on the system, as well as by the active and violent and long continued febrile state; and as a result of this demoralization we find that towards the close of the fever, subnormal temperatures are very liable to occur. Another
result can be seen in the venous thrombosis before referred to, this thrombosis is no doubt caused by retardation of the circulation arising to failure of the propelling power of the heart, which failure is dependent on this heart's nerve fibers. But the thrombosis is due to the above cause is strongly proved by the fact that it always occurs in the extremities, where naturally the propelling power of the heart has least intensity.

Being a disease peculiar to the Mediterranean, and especially to Malta and Gibraltar, we are forced to the conclusion that there must be some peculiarity in these regions which produces the poison. We find persons living in these regions are strongly acted on by the incrusting climate of the summer months, when the heat becomes tropical and exhausting. Most English residents suffer some or other dyspeptic symptoms with tendency to hepatic and splenic enlargement as they become Anemia is produced, and the whole constitution is lowered, and falls an easy prey to febrile attacks. Whether this is merely the effect of the heat, and the State of the summer climate, or whether there are other causes at work is very difficult to say. There is no doubt, however, that Mediterranean febrile Remittent fever is very prone to attack persons debilitated in the manner just described, or those whose constitutions
Has been lowered from any other cause. There was a history of low condition of health in both my cases 1 and 2 (Case 1 & 2) before the patients were exposed to the prison. Mr. P. in Case 1 had gone through great bodily and mental fatigue prior to the onset of the disease, and Mr. C. in Case 2 was far advanced in pregnancy, thus by no means robust health when she left the Mediterranean.

The drainage of Malta and Gibraltar is incredibly defective, though much has been done of late years to improve it. Yet from their situation, their condition from a sanitary point of view, can never be really satisfactory. This will at once be seen by remembering the fact that both places are surrounded by a sea which is almost of necessity tidalless, and that during the summer months at least, they are exposed to the fierce heat of an almost tropical sun.

The sewage must of necessity flow into the sea, where it lies more or less stagnant there being no tide to carry it away, thus we have Malta and Gibraltar financed by a river contaminated sea and one from which no one can purify it. The greatest danger appears to me the with the shipping for a vessel entering the harbor or mole stirs up this polluted water, causing the fishes to rise more than ever. So also all the salt water acts most beneficially on the sewage but should...
that it is unable to cope, so to speak, with the rain thrown into it. The natural drainage also seems to be very far from satisfactory; waterlocks now do doubt are much more frequently met with than they were a few years ago, but they have by no means yet completely displaced the original torrential, and sewer feeding cesspool which has so long been the main feature of the Maltese drainage. The very presence of a cesspool in any system of drainage now a days is sufficient to condemn that system, without entering into details as to ventilation and so on. The water supply of Malta and Gibraltar by its means almost approaches. Rain water has chiefly to be depended upon, and this is a source which naturally cannot be trusted for a constant supply as the amount varies so much. The water is collected in tanks, and is frequently in such close proximity to the sewage that it cannot fail to become contaminated and thus become a very potent factor in spreading disease. Further the tank and the disposal of sewage react on each other, for while the amount of water is so limited, we cannot hope for a good state of the drains, sewers, and in the other hand, while the drainage is defective, the water tanks are where they may be contaminated, a good and pure water supply is impossible. There is no doubt
in my mind that here we have the chief causes of this Mediterranean Gastric Remittent Fever. In the preceding I have endeavoured to point out what I believe to be the three most important factors in its production viz.:

1. Bad drainage - especially insanitary methods of disposal of sewage.
2. Bad water
3. Climate

The last mentioned factor is, no doubt vague, but the subject is one beset with difficulties that it is almost impossible to say if the Bacillus Malarias of Kels and Tomassini Rudelli is at the root of the Ill, or if we have to deal with atmospheric conditions which do act on the system as to make it an easy prey to poisonous gases and the like.

That the symptoms of this fever are not truly Malarias in Character is very much evident. What symptoms are present are most irregular and are very different from the symptoms of true Malarias Remittent Fever, these being so regularly about them, coming and going when least reflected, and bearing no relation to any hot or cold stage such as one finds in real Malarias affections. Neither are any regular Ague Symptoms to be found throughout the course of this Mediterranean Gastric Remittent Fever. So we find no Cold, Night or Sweating Stage which
Characteristics of quies, its true intermission also
characteristic, but instead of that a long
continued febrile state fluctuating and unceasing.
Chills do not occur, as hall occur in
typhus fever, but do shivering passing into cold
shocks, with chattering teeth, and red hemorhagies,
such as one is accustomed to observe in the cold stage
of quies. There is no definite interval to be
observed hence no quastian, tertian or quartan
quies. From the malarious point of view we can
see in this fever certain points of resemblance
to true malarious remittent fever, but the total
resemblance is so marked, and distinctive, that
it is impossible to say how much is really malarious,
or mali. That it is in a way remittent I admit, but
a glance at the temperature chart will show
the character of the remissions: so regular how
for the fever to return, but an irregular rising and
falling the probable course of which defies the
dent stakarc observers. Some writers find
their way out of the difficulty by affirming that
the difficulty is of our own creation, and that the
observed Mediterranean Remittent Fever is nothing
more than the admixed malarious Remittent
fever. For example find in the first volume of
Dr. Swedeus "Library of Medicine" page 238-253
a paper written by Dr. Chapeau on Remittent fever
in which he (Dr. Chapeau) when speaking in general
terms of Remittent Fever says "It has been called by the name of almost every country in which it occurs endemically, thus we have the Mediterranean, the Walcheren, the Hungarian Fever. Is that the hollow? Comparing the descriptions of these, we might be induced to believe that instead of one form of disease there existed many."

He says the symptoms he gives of what he calls Simple Remittent Fever do correspond in some points with the case. I have quoted, but in other parts they are so widely different that I cannot compare them to each other. He talks—on page 239—of a cold and 2D stage, which stages should be called the Mediterranean Remittent Fever. He also states—page 240—that the symptoms and remissions continue "until a critical discharge, which I call Commonly is a superficial hemorrhage, takes place." This hemorrhage he says seems usually on the seventh, fourteenth, twenty-first, or twenty-eighth day. "Should this series of events," he continues "2D stage takes place however, the fever becomes more uniform in its course and assumes a character which is fraught with much danger." (Page 240).

He has found his 2D to be the case for both my cases lasted over twenty-eight days. One for seventy days, and downward symptoms supervened, though the fever still lasted and did not become
true uniform as Dr. Shakete predicts. I find that Surgeon J.P.H. Bœlleau's experience agrees with mine for in Appendix No. XLVII. entitled "Remarks on fevers in Malta, with Cases" in the Army Medical Report for 1866 page 482-492 he gives as less than ten undoubted cases of Mediterranean Gastric Remittent fevers, in each of which the duration of the fever exceeded twenty-eight days—the shortest thirty-four, and the longest one hundred and fifty-one days. I say one of these made an excellent recovery. These facts surely speak for themselves. My patients suffered from fever very slightly. I do not know if Dr. Shakete would consider these as "critical discharges." For my part I do not. From what I saw gather from the writings of Surgeon Hunter and Bœlleau in Army Medical Reports for 1861 and 1866 I have come to the conclusion that these observers take my view of the matter, and merit with me that in Mediterranean Gastric Remittent fevers we have a much more complex agent at work than can be found in Simple Malarious Remittent fevers; and that these two disorders are quite distinct, and are by no means one and the same disease.

Having discussed at some length the relations between Mediterranean Gastric Remittent fevers, and those Malarious fevers; and having done my best to explain and point out in what way these
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**Typhoid Fever**

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**Mediterranean Fever**
disorders differ, let he now turn the other
stumbling block in our path, and endeavors to
remove them from our way.

This fever has, times out of number, been
confounded in the most marvellous way with
Typhoid Fever, to every much less so, with
Bilious Fever, and also with the so-called Chol
Malarial Fever. Why Typhoid Fever and Mediterranean
Gastraic Remittent Fever have been so confounded
is to my mind almost inexplicable, yet neverthe
ever, it is so, and by 20 or 2 few observers.

Let us consider the temperature first as being the
most important difference. Only compare the
irregular fluctuations of the Mediterranean fever,
with its sudden recurrences irrespective of day,
and its frequent disregard for the ordinary evening
rise, with the regular chart produced by Typhoid
fever; twice in the latter how regularly the evening
temperature overtakes the morning observation by a
degree, or a degree and a half, and less each
day from the Commencement of the disease to
its turning point the temperature reaches a higher
point, and then having passed that point
as gradually and regularly sinks again to the
normal. Day, only compare these two pictures
for a moment and at once you will see how
vastly different the course of each is (See chart opposite).
The next difference I take up is that relative to
the Abdominal Symptoms. In Mediterranean Remittent Fever, one may safely say the abdominal symptoms are comparatively few. Nausea, constipation usually, and dyspeptic symptoms always are present. These latter manifest in the nausea, pain in the epigastrium, anorexia; while in Typhoid Fever we have dyspepsia, nausea, and tendency to vomiting, but also marked distension of the abdomen, with pain and gurgling frequently present when pressure is made in the right flank region; and diarrhoea, occasionally with haemorrhage. This diarrhoea, I admit, is not always present, but when it occurs, it is most characteristic of the Typhoid-like appearance. Thirdly in Mediterranean Fever, there is total absence of any fevers; in Typhoid, the fevers last appearing between the eleventh and the fourteenth day of the fever. This rash is by no means a universal symptom but it can be very safely observed among the usual ones, the absence of which is rarely observed.

Fourthly, there is no marked change to be seen in the Petrenai patches, and solitary glands of the celiac in Mediterranean Gastric Remittent Fever; (Autopsy by Surgeon Hawston page 374 in Army Medical Dept for 1861) as takes place in Typhoid Fever. This fact accounts for the absence of any tendency to haemorrhage from the bowel in the
former disorder.

Fifthly. Whatever complications may occur in Mediterranean fever, Pulmonary affection are conspicuous in their rarity, while in Typhoid fever, Pneumonia, and Pulmonary Congection are complications which are somewhat frequently met with.

Lastly. Mediterranean fever is a great deal less fatal in its sequelae than Typhoid fever. The mortality in the former is very small indeed, while in the latter it reaches 20 or 25 per cent (Broadbent).

There is a certain similarity existing between this disease and Relapsing fever, but the following remarks will I think point Relapsing fever beyond the path of possible identity with it—Relapsing fever, when it occurs, is epidemic, and visits a district at very long intervals, its appearance is indicative of want and famine, and it affects the poor, and badly fed, and clothed inhabitants of a region; being almost unknown among the well to do. On the other hand, Mediterranean Remittent fever is sporadic, and endemic, it occurs at all seasons in certain localities, having its direct dependence on want and poverty, it is probably due to defective drainage. It selects its victims from all ranks of life, rich and poor alike suffering. The onset of Relapsing fever is sudden, producing rigor, vomiting, and rent pain
in the back and limbs. When once established its course and symptoms are regular, and definite. It lasts for about five days, and then terminates with some "critical discharge," remains in complete abeyance for about a week, and then may appear again; in this way one, two or rarely three relapses may take place. With Mediterranean fever this is very different. It begins gradually with marked dyspeptic symptoms. The fever slowly makes its appearance, and then continues its uncertain course for a long period. It has its "critical discharge," and having reached its height, it gradually, though with many remissions, declines into normal temperature. In the tick-borne jaundice fever, jaundice, Rebecca, and remissions are very rarely if ever of such long duration as the intermission periods of Relapsing fever. Delirium, a very rare concomitant of Mediterranean, gastric, remittent fever, is more common. Though not constant in Relapsing fever, especially towards the end of the first week of the disease. Somewhat may also be gathered from the tongue. In Relapsing fever, we find it is completely covered with a thin whitish film, whilst in the Mediterranean fever, the edges are red, and the film limited to the dorsum.
2 Cases of Simple "Maltese Fever."

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Pulse
Resp.
While on the subject of differential diagnoses let me say a few words on the main points in which Mediterranean Gastric Remittent Fever differs from what is generally known as Malaria Fever, for the two diseases are sometimes confounded with each other, and that there is any real reason for comparison as they differ exactly in character, yet occurring as they frequently do in the same region they are apt to be considered by some as varieties of the same fever. This, however, is by no means the case for they are undoubtedly quite distinct ailments. The crucial point in the differential diagnosis lies in the duration of the two fevers. True Malaria Fever lasts usually from seven to fourteen days, while Mediterranean Gastric Remittent Fever as has already been pointed out is of much longer duration, lasting for two, ten, twelve weeks or even more. It is altogether a fever of much greater severity.

Prognosis and usual termination of Mediterranean Gastric Remittent Fever.

In a case of ordinary severity the prognosis as to a fatal termination is as a rule good, the mortality in this disease being very small. As however more complications should occur the favorable prognosis must be modified accordingly, but as a rule the ordinary complications one meets do not in any way affect the favorable result.
Should the fever however slip into the "Bilious" type, then the prognosis becomes very grave as this is a most dangerous state. Fortunately this is not the usual course of events. The ordinary case (as seen in England at any rate) after going through its fifty, seventy, or a hundred days of febrile state, and having towards its close gradually reached the normal temperature, passes into Convalescence, and the patient gaining strength fast, and with a good appetite, soon regains his former health in every respect. The disease appears to have behind it no abnormal tendencies of any kind, and having once thoroughly left the patient it returns no more, unless he again exposes himself to the danger. Surely here we have another argument against the Malarious theory as the cause of this fever; for every one knows how tenaciously Malaria clings to its prey, and how it will on the slightest provocation present itself again, though years may have elapsed since the first attack.

Treatment, medical and otherwise.

The first point to be attended to is the removal of the patient as soon as possible from the Mediterranean immediate neighborhood. This if itself being sometimes quite sufficient to set up a healthy action, and bring on a Convalescence, which would probably be long delayed should this
The first indication is to have thorough, good, and cheerful nursing. Few nurses should be spared of possible; for right and day nursing will be imperative, for at least the first stage of the fever, if not all through. I have found that in Mediterranean Fevers as in many other continued fevers, so long as its grave complications and themselves, it is done a battle of careful intelligent nursing than one of doctoring or drugging. Thorough good ventilation of the sick room is very necessary throughout the whole length of this disease. The air of the apartment should be kept fresh, and cool, its draughts can for a moment be allowed, and careful endeavor should be made to keep the temperature as uniform as possible. Every effort should be made to keep it between 60° and 70°. At times severe be allowed twice alone the latter point. It is important for both the medical attendant and the nurses to keep the patient as cheerful and hopeful as possible, for this fever produces very great depression of spirits, which tends really to protract the disorder, and retard its convalescence. The diet must be non-stimulating but highly nutritious, care being taken to give nothing that can possibly irritate a stomach whose digestive
functions are greatly retarded and very much weakened. Milk and soda water, beef tea, broth, beef jelly, eggs, and other like should be given in small quantities, frequently, according to the amount of digestive disturbance present. Ice is very palatable, and the patient should be encouraged to take small pieces frequently, especially if nauseating vomiting at all ranked symptoms. As the stomach symptoms subside, the diet should be varied, those things which should still hold the prominent position. Nuts, rice bread, boiled fish, chicken, &c., &c., the fried race should be taken away a diet that soon becomes roast, soups, and even nauseating. Alcohol must be prescribed with caution, but should in no wise be the means started if occasion arises for its use, as probably will be the case during the disease. If there is much depression, brandy, whiskey, or champagne will be found of signal value, and absolutely necessary. Toward the close of the case the diet may be relaxed, and fruit or some other light wine given with the food. With regard to medicinal treatment, I have found things absolutely useless in cutting short, or in any way lessening the severity of this fever, which has taken a certain course, and which will go in spite of all our efforts to the contrary. The
old treatment by blisters, and counter-irritation, is more than useless, doing more harm than good.

by lowering the vitality of a patient, she will exhaust all his strength for a prolonged struggle with a pyrexia. Quinine in the early stages of the disease is very badly borne by the stomach as a rule, so it seems unfair completely to lower the temperature, probably on account of the irritable gastric membrane being unable to stand it. Later in the disease, when convalescence is really established, it forms one of the most useful tonics we have at our disposal. The nausea vomiting are best treated with ice, by careful dietaing, milk or soda water being particularly useful. Of Reumy, Phrenite or may be prescribed to allay the irritable condition of lining membrane of the stomach; there is however one objection to its use that is, that it has a tendency to increase the constipation usually present, which is by no means desirable. The bowels should be relieved by frequent enemas. I have found an occasional pill composed of the pain of tincture, with some color-pith, and a little Hypercium very useful, especially of there is any tendency to jaundice and pale colomed stools. The majorty of Anaodynes are not very suitable to this fever, should be used with caution. If there is much sleeplessness, the Bromides, and Hypercium are of most value.
Chloral hydrate may also be administered, but with caution.

The complications must be treated as they occur. Instrinseque, with amines, and Berenil, internally. Purgatives, and Cortisone, locally.

Pneumatics, with local anesthetics relieve the pain, and with toxins internally. Specially Quinine and Sum-toting up the tone of the system.

Neuralgia, with Cortisone, such as the compound liniment of Belladonna applied to impermeable gauze, locally. With Quinine internally. When Emetic and Intestinal Neuralgia are very acute, the pain great, the hyperemic injection of Porphyrin and Porphyrin will be found to be most effective.

Chromatics, with rect to the part affected, obtained by its banishing power, and with toxins internally. Should there be phlegmasia it must be treated on general principles.

Towards the close of the disease, and when Convalescence is fairly established, toxins must be given freely. They have found that useful aiding the feeble functions to regain their former power.

Quinine, Iron, Porphyrin are the most useful, followed by Arsenic. In most cases these drugs will be found to suit, and to relieve...
the intense weakness and great anemia that
invariably follow Mediterranean Gastric Remittent
fever. Repair will be found of great use in
aiding detention until the Gastric mucous Membrane
has returned normal healthy state of natural
vignes.

In order to make my subject more complete, let
me quote an abbreviated form the record of
an autopsy made by Surgeon Manton in a
Case of Gastric Remittent fever of the Palema
type, and given by him in the Army Medical
Department for 1861. Page 514. I quote nearly the full
account, as it is of importance in showing the cause of
the symptoms and the true nature of the disease.
He says: "A hyperemic state of the stomach particularly
about the smaller and "bowel present. The mucosa
membrane appeared softened and covered with
a thick feature of very adhesive mucus; places
it was much bloody stained. The duodenum
was red and inflamed.... The smaller bowels
were distended with gas and in places were also
much infected.... The villi were hyperemic....

The large intestine was contracted and
empty. No glands were affected, save that the
small solitary glands of the large bowel were
perhaps, unduly prominent. The mesenteric
glands were also a trifle larger than usual.

... Gall bladder full of dark bile, ducts patent.
Lucas Long (28 weighed) It was of a uniform dull, brackish brown, the lobules being very indistinctly defined. Portal veno congested. In the interior of the gland were some hemorrhagic patches of dark blue and friable consistence. Spleen much enlarged, of a dark violet color. The splenic parenchyma had numerous aphlebitic spots; apparently pure hematina of blood.

In the foregoing statements I have endeavored to draw attention to, what I consider, the leading features of Mediterranean Gastric Remittent Fever. Before concluding however let us again urge the importance of considering this disease as a disease for its, and not as a mere variety, or modification of any other form of disease.

I am of opinion - after a careful study of the various symptoms and complications - that it forms a link between Malarial affections, on the one hand, and Syphilitic fever, on the other, but that it is neither a variety of the one nor of the other. I may here adduce the arguments on the symptoms, and signs before us. I wish to repeat these again, would be a mere repetition, but in order to make my meaning clearer let me class them under your heads.

1. The temperature, its peculiar presentations, and fluctuations irrespective of hours.
2. The course of the fever, with its train of symptoms and complications.
3. The long and uncertain duration of the disease.
4. The peculiar localization of the fever producing region.

I deem myself fortunate to have had the opportunities of personal supervision of cases of this Mediterranean Remittent Fever, which is so rarely observed in England and Scotland that the foregoing imperfect sketch may convey in some measure to my readers an interest in this somewhat obscure disease, and may lead them to justify the deductions I have drawn, and to agree with me in the results I have arrived at.