Facts in Therapeutics.

In the following sketch, I shall select several of the more important drugs which at present closely occupy the attention of therapists, and endeavour to show in what circumstances their reputed remedial effects are founded on sufficient evidence, and at the same time point out various diseases in which they have been employed unsatisfactorily. It will not be in my power to advance many original observations of my own; I shall endeavour therefore to indicate those views which have lately been rendered most probable, and bring forward some facts which I have witnessed in practice in support of statements not generally received.
Mercury.

I have placed mercury first on the list as the subject of consideration, as perhaps no other drug has been more extensively prescribed in modern times, or excited a greater amount of diversity of opinion as to its actions and uses, and price in the present day, a great permutation of feeling has occurred as to the extent of its utility in many diseases. The therapeutic actions of mercury are perhaps best expressed by the terms Catalytic and Eliminative. The first implies a power to counteract or destroy a morbid material or process in the blood, the other, that of restoring the function of a gland when impaired or eliminating morbid materials.
From the system, alternative and sedative have likewise been proposed as expressive of some of its therapeutical effects, but on reflection, will be found with several other of its therapeutic titles to be included under the division eliminative, and the second has been assumed apparently on insufficient grounds from its soothing action in some cases of dysentery and other enteric affection, but this is doubtless due to its eliminative action on the liver and other glands and may with more propriety be placed under the same division as the preceding. Under the first term, catalytic, the anthropologic and
and supposed antispasmodic powers of mercury are included.

The voice of general experience has established the fact that mercury is not equally serviceable in all inflammations; that its use is greater in acute ethereal inflammations of the pericardium and pleural membranes than in those of the pericranium, organs, and that, from its exciting a sedative action on the heart and blood vessels like antimony, its curative action is less speedily manifested. From this deteriorating effect which it produces on the blood by diminishing its tone, it should never be administered to induce mercurialism except in
This class of cases above mentioned, antimony generally accomplishing all that can be obtained in chronic inflammation of other organs.

In acute inflammation of the membranes of the brain and spinal cord in adults, mercurialism following blood letting are the only remedies that can be relied on.

Mon, Iowa
6-25 1855

[Signature]

Dr. Rees, in regards to tetanus and inflammation of the brain, states that he knows of no instance where tetanus has proved fatal after salivation had been induced. In acute cases its action is invaluable.

In chronic inflammation of the pleura and peritoneum with effusion, counter irritation with...
with the internal administration of iodide of potassium are measures generally regarded as preferable to the repetition of mercurials, and as late years antimony has tended (and from all evidence and experience that may be depended on) justly to displace mercury in acute asthenic inflammation to chronic inflammation. Iodine has in many cases superseded it. When the dangerous effects it produces in persifulous individuals along with the frequency of inflammation in this class of patients, and the violent dysenteric symptoms it very often occasions when rapidly introduced into the system are borne in mind, I
think it must be regarded as a beneficial change in medical practice that mercurialism is now much less resorted to than formerly for the treatment of inflammation. The production of Bright's disease of the kidney by its agency is now well established on undisputed testimony, and during any period of study I had an opportunity of knowing intimately the particulars of a case where the disease, if not produced, was called into active existence by mercurialism and proved fatal in a few months. I lately got the particulars of a case of pleurisy pneumonia from a country practitioner where the fatal termination was
was evidently hastened by severe dysenteric symptoms coming on suddenly while mercurial injection and frequent doses of the drug were being used, as prescribed by a consulting physician. In a case of pericarditis with considerable effusion which occurred last autumn, every mild dose of the drug administered for four or five days were followed by dysenteric which lasted for about ten days with greater or less severity; the case, however, ultimately did well.

The second reported therapeutic action of mercury included in this hemocatalytic can be best studied by tracing the history of the recurrent disease for the last
Three centuries.

Between the years 1493 and 1495, the venereal disease became so aggravated in Europe, as to cause general alarm; and this, so far as can be judged from history, seems to have been due rather to the great extent to which mercurialism was then pursued, than to any newly acquired virulence of the disease itself.

Ulric de Huten in 1519 after giving a graphic and fearful description of the results of vaccination, states that many chose rather to die of the disease than undergo such a method of cure. Notwithstanding the recommendations made by Linnaeus, the treatment was continued.
treatment of syphilis by mercury contained in full force till a very recent date. Even Büsche in the last century, wishing to effect a cure, it was necessary that four pounds of pulvis should be about every twenty-four hours and the salivation continued for upwards of ten weeks. The credit of first attempting to substitute a less dangerous and at the same time efficient treatment of the disease is due to the Ferguson and other army surgeons who practised it during the Peninsula Campaign, but especially to the late Professor John Montgomerie of Edinburgh. Whose lectures and writings were efficient in Scotland.
In sustaining the use of mercury in syphilis.

In England, however, the doctrine of the waters, and in Ireland those of Carmichael and Collin have been deeply imbued and still influence more or less the treatment of the disease.

What is called the simple treatment of syphilis, consisting of attention to certain hygiene rules. Large quantities of diluent beverages, the warm bath, and vegetable diaphoretics as quassia and quinine; dropping the diseased parts at first with anodyne and emollient afterwards with stimulating applications. And in intractable cases, giving the iodoide of potassium internally has been contrasted on a very large scale with the
The mercurial plan. In the year 1822, the Royal Council of Health in Sweden was commissioned by the King to institute experiments on the comparative merits of the two modes of treatment and to draw up reports for all the civil and military hospitals annually. In the various Swedish hospitals 40,000 cases came under treatment; the one half by the simple method, the other by mercury; the proportion of relapses was found to be seven and a half per cent for the first, and thirteen and two thirds for the second. Dr. Frick's experiments (1820) in the Linköping hospital tend to establish the same conclusions; he found relapses more frequent and secondary syphilis more severe where mercury...
mercury had been given. Out of 1649 patients 582 were treated with, and 1067 without mercury, the average duration of the latter method was 57 days, that of the former 85. He never observed curcis, loss of the hair, or pain in the bones, follow this treatment: and on inquiring, he found that all cases came under his care in which these symptoms were present had been treated with mercury. Similar reports by the French Council of Health in 1833 agree in stating the cure by mercury as one third longer than that by the other treatment. Perhaps one other fact in therapeutics has ever been established on stronger evidence than the negative one that mercury is no antisyphilitic.
Upwards of 50,000 cases having been subjected to experiment in the reports above alluded to.
The stimulative action of mercury is one which is very frequently employed in the treatment of disease, appears to me more certain than its antiphlogistic effect; and, in account of the drug not requiring to be pushed, as to cause its marked constitutional symptoms, attended with comparatively little danger. Although tending to increase all the secretions of the body, the preparations of mercury excite especially the functions of the liver and bowels—in other words, they are said to be cathartic and purgative; and, when the system has become thoroughly saturated with it, acts as a sudorific.
in the face and saliva by Mr. Lehmann after having been taken into the stomach, and Mr. Bachtheim has found it in the bile of dogs to whom it had been given. Proof of its obtaining entrance into the blood, and passing thence through the glands into their secretions.

The therapeutic action of mercury as a Cholagogue is especially manifested in those cases of torpor of the liver, where without any evidence of mechanical obstruction to the flow of bile, the stools become white or ash-coloured. The urine of the colour of brandy, and the conjunctiva perhaps of a slightly yellowish tinge. From a pretty extensive observation of these cases, it is first pointed out by Dr. Gelloni, Birck, and Scherer.
The urine after being boiled gives a pink or still deeper colour of the same kind on the addition of muriatic acid showing the presence of an excess of phosphorus, I believe the opinion of Dr. G. Bird to be correct that this excess indicates some functional or organic minor chief of the liver, spleen, or some other organ connected with the portal circulation. In all these cases the exhibition of a mild mercurial, so as to excite the liver to an increased performance of its functions, will be found an important item in their treatment; and I believe that very many of those cases in which this excess of phosphorus is observed and mercury has a beneficial effect in causing its disappearance and improving the general health, are precisely
Those in which the therapeutic action of mercury is commonly expressed by the term "Alteration".

One of the most important of the actions of the preparation of mercury which are included under "Alteration", is its action in some circumstances as an indirect diuretic. It is well known, that, when the pressure in the vascular system is much increased, diuretics will not act until it has been removed; thus when the portal circulation is the seat of obstruction, mercury properly administered will act on the liver, increasing its secretions and at the same time the circulation through the organ and thus remove the congestion of the portal venous system.

In many cases of chronic heart disease
disease, in which there is hepatic congestion where dyspeptic symptoms supervene, the kidneys cannot be forced to increased action by any diuretics till the congestion of the liver has been removed by a Mercurial. This is perhaps the only combination of circumstances in longstanding heart disease which warrants the administration of Mercurial, and I know of no case where more certain [at least temporary] alleviation of the symptoms follows the use of any other remedy. Wilson in his work on diseases of the heart mentions the case of a gentleman with the combination of diseases above mentioned who had thirty distinct courses of mercury, and with such advantage as to enable him to pursue a laborious profession.
Mercury has been administered internally in many diseases, which I have not noticed under any of the therapeutic actions mentioned; but I have neither witnessed any good effects from its use, no unequivocally, or received evidence from the practice of others so strong, as to convince me that any benefit was to be derived from its use in those cases.

Among the external application of the preparations of mercury, I may mention two morbid states where I have seldom seen them fail to do much good, namely, the black scurf in varicose ulcers, and the external treatment (quinacrum nitratum / hydroxyper /) in phthisical incontinence.
Antimony

From the frequent notices of this agent in the previous remarks on the therapeutic action of mercury, it will be most convenient now to review its curative powers. In modern times antimony has been used very extensively in the treatment of disease, but for a long period it appears to have been employed almost exclusively for its emetic action. Sydenham, for example, using it for that purpose only under the title of Antimonium Benedictum and Crusus Metallicum its power of producing an act in inflammation, independently of any emetic effect, having been recognized at a comparatively recent date by Dr. Marzato of Bristol and subsequently by Bassoni of Genoa.

Mr. Headland's classification
of the therapeutic actions of antimony (tartar emetic being taken as the type) may be followed as being perhaps the best, very antiphlogistic, specific sedative, and eliminative; its irritant action when applied externally will also be noticed.

As an antiphlogistic and specific sedative antimony is more by many of the most successful practitioners held as occupying the first place both on account of its more speedy curative effect and also from its not leaving the patient’s constitution damaged to the same extent as when mercurialism has been kinder. Of course to the mercury, it deteriorates and impoverishes the blood, but, so far as I am aware, never induces any well marked cachectic state of long standing; the chief danger in its administration being...
being the risk of intensely depressing effects occurring soon after the exhibition of large doses, but their effect is by no means of common occurrence in adults.

The disease in which antimony has been most generally and successfully employed is pneumonia. Its sedative action on the vagus nerve proves of direct service by influencing the heart and lungs, while its power of counteracting the inflammatory process in the blood itself is also manifested. There now exists but little difference of opinion as to the absolute efficiency of the remedy in cases of acute primary pneumonia; statistics having lately shown the much-counted dietetic or expectant method of diet, as practised at the Weiden
Weiden district hospital in Vienna to yield a much higher mortality than the other hospitals in the city. Its first report in 1849 gave a mortality of 7.4 per cent of the cases, in 1852 9.2 per cent and by a report issued in July 1856 it is stated as 20.7 per cent. Dr. Wilson of Edinburgh gives us the result of 29 cases of primary pneumonia occurring in private practice and treated one half by bleeding and antimony, the other by antimony alone, a mortality of 4.16 per cent. Laennec states the result of his practice at one time as 2 deaths in 57. The point which appears at present not quite settled as to the exhibition of antimony in pneumonia is the dose, the followers of Parsoni giving it in from one to two and a half grains frequently.
repeated, while many of the best British authorities consider one-third or one half-grain a sufficient dose. The Italian doctrines are probably for general purposes rather extreme, for much smaller doses are often equally serviceable. Dr. Childs in his excellent paper has I think indicated the medium dose in acute primary cases—namely, a grain every two hours in solution combined with five minims of tincture of opium. The average amount taken in his 27 cases was 47 grains; the largest quantity 204 grains, but this instance when contrasted with the amount sometimes exhibited after the other method, makes Atamantico mention a case treated by Razored where 36-90 grains were taken in thirty-five days, apparently with good effect.
In the first stage of acute Bronchitis, antimony is highly useful by diminishing the force of the heart's action and thus removing the pressure from the distended capillaries of the mucous membrane; its uterine action is likewise in general coincident.

In Croup antimony has long been considered as one of the chief remedies that can be employed; but from the tender age of the patient, its use in sufficient quantity to make a strong impression on the disease is often attended with symptoms of such dangerous depression as to render the suspension of its use imperative. The sulphate of Copper in doses of from half a grain to one or two grains, according to the age of the patient, frequently administered in urgent circumstances.
Worms were very ten or fifteen minutes) has been recommended by Homerkopff as very efficacious. But of 99 cases thus treated seventy seven recovered; the average quantity taken by each child was 31 grains. G. J. Sauter of Rosen and Ingoldinsky are of the same opinion; the latter, after the usual symptoms have yielded to the sulphate of copper, relying on the internal use of the carbonate of potash and a blister over the Manubrium of the sternum, he reports 28 cases out of 30 as having been cured by this method.

I lately got the particulars of a case of croup in a child six years old, where this treatment was adopted with the happiest results.

As I shall not have time or space again to consider sulphate of copper, I may mention that
in the capillary bronchitis of children, the sulphate of copper is invaluable. Causing free emetic action and great relief without subsequent depression.

In delirium tremens, antimony uncombined has been proposed by Dr. Peebles of Edinburgh and used with the best results; in his able article on the Pathology of delirium tremens and its treatment without stimuli or opiates, he has clearly shown that his proposal is only rational, since the most trusted worthy pathologists as Leipoldt, Abercrombie and Bright view the disease respectively as cerebritis, meninigitis, and arachnitis, and since the ordinary treatment by opium and alchoholic stimuli simply add to the mischief the first by increasing the cerebral congestion, and the second by saturation,
Saturating more thoroughly the brain with the alcoholic poison.
The states that he has treated upwards of 30 cases of the disease with antimony in doses of from a quarter to half a grain every two hours or oftener, and with uniform success. Its direct influence, he considers, that by reducing the vascular excitement of the brain, softening the nervous system, and diminishing muscular power, while its more indirect action is to increase the secretions of the skin, bowels, and kidneys. A single case of delirium tremens, of which I knew intimately the particulars, was treated on the principles above mentioned; and proved, so far as a solitary instance can, their correctness.

To enumerate all the instances
in which the antiphlogistic and sedative actions of antimony are of service, would be to give a list of acute, atheric inflammations of almost every organ and tissue; in other forms of inflammation neither decidedly acute nor atheric, the question as to the use of antimony and the amount to be given, or whether some other medicinal agent less lowering would be preferable, must be determined by the predominance in the individual case of symptoms denoting disturbance either of the vascular system, or of the nervous.

In considering the utility of antimony in pneumonia, it was stated that this was apparently due in part to its sedative action on the vagus nerve thereby lowering the heart's action and diminishing the number of respirations.
Raspurations; the emetic action of
the drug seems also referable to
its influence on the portion of
that nerve distributed to the
Stomach. Given as an emetic (largely
diluted), antimony is often very
useful in the early stage of
acute local inflammation, but
in cases of poisoning, where to aid
speedily to empty the stomach
it is much inferior to one of the
irritant emetics as sulphate of
zinc or mustard...as these differ
from antimony in acting very
speedily, and without the pro-
duction of nausea which would
relax the vascular system and
favour absorption of the poison
to be evacuated.

Considered as an eliminative,
antimony increases the secretions
of the skin and bronchial mu-
nous membrane, i.e., in other words,
it acts as a diaphoretic and
expectorant.
expectant. Tartar emetic in small frequently repeated doses (one sixth to one eighth of a grain) acts with great certainty as a diaphoretic when combined with a minute proportion of quinine, and is very generally employed in the treatment of the Exanthematous and other febrile states, but the preparation of antimony which acts most certainly on the skin is a pestis known by the name of James's Powder, for which the Pelvis Antimonialis in doses of from three to four grains, and a mixture of one part of tartar emetic to twenty of sulphate of potash in similar doses are substituted. The expectorant action of antimony is of the greatest use in the earlier stages of Bronchitis and is a remedy rarely omitted to be used by the judicious practitioner.
Practitioner in the circumstances, applied externally, tussar emetic (1/2 to 1/8 of a pound) is a powerful counter-irritant soon producing a large crop of purules which remain in general for a considerable time. It is thus often a valuable means of relief in chronic diseases of the contents of the chest or abdomen and sometimes of the head, but has the disadvantage of occasionally appearing in situations where it had just been applied in weakly subjects also it should be used very cautiously, or not at all, from the tendency which the large purules sometime have to become gangrenous.

In connection with the external application of tussar emetic I may mention a singular statement made by Lichtenstein in 1841.
preservative against the small pox has been derived; that lymph, taken from the pustules produced by tartarised antimony and inoculated in a person who has not been vaccinated, produces vesicles which cannot be distinguished from those of vaccinia, further, that these vesicles confer a protective power against small pox equal to the cow-pox, and that the lymphs from them may be transmitted from person to person. He inoculated and re-inoculated thirty one persons with this matter during one epidemic of small pox, with the effect of preserving them from an attack of the disease, although they were freely exposed to the contagion.

The subject deserves further inquiry.
Ipecacuan
This substance has so many ananalogies to tartar emetic in its actions, as to render any lengthy account of its therapeutic power unnecessary; but as these differ from those of antimony considerably in degree, it may be well now to consider them.

The emetic action of ipecacuan, which is its most striking physiological effect, is like that of antimony, slow in being manifested, and attended with great nausea. Its action on the vagus nerve is, however, less powerful than that of antimony, and consequently its effects on the lungs, heart, and stomach, occur in a minor degree.

As an expectorant, it is of the first service in bronchitis, being generally combined with antimony at the commencement, and subsequently with an alkali in very young children.
children, the remedy is often with great success employed singly.
In febrile and phlegmatic affections it produces good effects as a di-
aphoretic when combined with opium, as in the well known
Dovers Powder where the two are mixed with sulphate of potash.
The disease, in which ipecacuan, next to bronchial affections, has
been used most extensively, is
dysentery in its various forms,
especially that occurring in warm
climates where it is generally
caus'd by exposure to cold at
night after the heat of the day.
A reviewer of "Morehead on the diseases
of India" in a recent number of
the Journal states that for the
treatment of dysentery a combi-
nation of blue pill ipecacuan,
and gentian, with hyoscyamus
is the happiest prescription ever
employed, its effects being to
stimulate
Stimulate the portal system; opiates he considers as positively injurious. Hydenham entertained a different opinion; for after speaking of their use in the disease, he says "I cannot forbear mentioning with gratitude the goodness of the Supreme Being who has supplied afflicted mankind with opiates for their relief."

There can be no doubt that, after the use of such remedies as the combination above mentioned, and the application of a few leeches to the abdomen, spasm is of the greatest service by lessening the excessive irritation, and leaving determination to the skin.

Lastly, ipecacuania is often very useful in cases of impaired appetite with slow digestion from deficient gastric secretion, when given in small doses of from half a grain to a grain with a little rhubarb.
and extract of gentian shortly before breakfast and dinner.

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Bistrite of Potash.
The previous observations having been almost exclusively devoted to therapeutic agents which are chiefly useful in the various forms of inflammation, I shall now introduce bistrite of potash before leaving that class, both on account of its great importance in the treatment of disease, and also from it being the type of a number of substances much employed in medicine, commonly called salines. The therapeutic actions of this substance may be stated to be antiphlogistic and eliminative, to which some add the term refrigerant, which however does not seem well proved to be quite distinct from its antiphlogistic effect, as the diminution of the increased
Temperature of the body which occurs in febrile and inflammatory states is only one of the minor results which follow the successful use of remedies given for the purpose of counteracting the inflammatory process.

Potash and many other salines, such as the Chlorate of Potash and the Sulphate of Soda, diminish the amount of Fibrine in the blood when taken for some time, and Gulliver has made the important observation that they tend to keep amunder the blood corpuscles, which, during the process of inflammation, adhere together in masses. In their action, however, they are surpassed by free alkalies; since salts generally pass out of the body without change whereas alkalies enter the secretions combined with an acid, and when given in any amount must...
remain to a certain extent free in the blood.
As a mild antiphlogistic, natrætate of potash is used in very many sebile and inflammatory affections, either alone, or in conjunction with tartarate of antimony. But the disease in which of late years its powers have been most eminent, has been considered of the highest value, is acute articular rheumatism.
Its use in this disease was first strongly recommended by Dr. Brockley and subsequently by Dr. Gardner, who after enlazising its effects in the strongest terms, gives it as his deliberate conviction, that it prevents inflammation of the endocardium. Lomon considers that this effect is due to its solvent action on fibrine and questions very seriously whether the prevalent notion that the fibrinous deposits on the valves are really caused by inflammatory action.
ation, in the strict sense of the term, he maintains, and with justice, that no part can be said to be inflamed which possesses blood vessels and refers to the Gaebeli preparations as showing that the plexa vasorum do not reach the lining membrane. He instituted some comparative experiments in living animals to determine whether venous or arterial blood deposited more readily its fibrin on a foreign body introduced into the vessel, and found that arterial blood uniformly did so with the greatest readiness; venous blood very slowly. From a consideration of the whole subject of fibrinous deposits in the valves of the left side of the heart, he was led to resolve their occurrence there to two circumstances—great chemical tendency to the deposition of fibrine, and great mechanical facility for its Intanglement.
Entanglement.
The great success attending the treatment of the disease with nitrates of potash, and the rarity of endocardial affection in cases so treated, as stated by Gandrin, certainly go far to confirm Sinai's views, and no one, I think, who has seen much of the treatment of acute articular rheumatism, would like to resort to the old method of leechletting with Calomel and Opium internally, when endocardial complication threatens. By many of the advocates of this plan of treatment the salt has been given in very large doses. Dr. Bushlan states that he has given from one to three ounces of the salt daily largely diluted in water and with best results. Professor Bennett gives a series of cases - where he has used the remedy in much smaller doses (half a
broached to two scuppers every three or four hours, with apparently equally good results. I have seen numerous cases treated successfully after the same method.

As a diuretic nitrate of potash is generally combined with other remedies of the same class, such as squill and digitalis, but by many it is considered less certain in its action than the acetate or bitartrate of potash. Applied externally, during its solution in water, (as in a bladder) it is useful in reducing the temperature of external parts. Five parts of nitrate of potash and the same proportion of the muriate of ammonia in sixteen parts of water is a useful refrigeratory mixture, lowering the temperature forty degrees. Before dismissing the class of salines
Sedatives, I cannot refrain from mentioning two whose employment in disease furnish two undeniable facts in therapeutics, namely, the remarkable utility of carbonate of potash in stomatitis, both in children and adults, and the great solvent power of the phosphate of soda over depositions of uric acid.

The great efficacy of the acetate of potash in many skin diseases, as strongly advocated by Dr. Easton of Glasgow, is also deserving of notice and may now be considered completely established; its power in many cases being little, if at all superior, to the liquor arsenicalis.

Quinine
Any time warns me that the important and extensive list of therapeutics agents called Tonics should now be considered; I find it
it will be impossible to review each of them separately in detail, I shall therefore select the alkaloid of cinchona bark, as exhibiting in the strongest degree the powers of other tonics derived from the vegetable kingdom. Any other remarks on this class of medicinal agents, I shall include in a general enumeration of striking therapeutic facts which I have not found it in my power to notice at greater length and with which I shall close this essay.

The therapeutic actions of cinchona, which I shall here consider as employing the disulphate as it is the preparation of the alkaloid most commonly employed, are tonic and antiperiodic. Mr. Headland, however, considers all its actions under the single designation tonic, bringing forward a very ingenious
ingenious hypothesis by which he thinks he renders it probable that
the beneficial effects of the drug
are due to its taking the place
in the blood of one of the elements
of the bile. Taurine, which he supposes
to be absorbed from the intestinal
Canal, and to be present in the
blood in the normal state. Whether
his hypothesis be received
as probable or not, quinine is
certainly useful in many di-
cases in which there is a
failure in the secretion of bile.
In large doses it causes in a
healthy person dry tongue, thirst,
nausea and intense pain in the
stomach, together with violent
head symptoms, which may end
in death. When there is merely
giddiness and pricking in the ear
it has been termed Cinchonism
and it has been thought by some
that these symptoms are necessary
Blue. for the full development of its therapeutic action. It is absorbed during its action and may be detected in the urine and sweat. As an antiperiodic in Intermittent Fever, sulphate of Quina came to be generally used long before its value in other diseases was known, as such it speedily causes diminution and I may say cessation of the attacks. It is the most powerful antiperiodic in the whole range of the Pharmacopoeia. In the different forms of ague it acts as a specific. According to Dr. Barber of Dublin small doses from one to two grains daily act equally as well as larger ones in districts that are not aguish. Of 30 patients treated in this way, not one persisted the influence of the remedy. In Dr. Morgan's cases half grain doses thrice daily suspended the paroxysms for eight
eight days. The amount required to cure an ordinary case of ague is somewhat more than nine grains. In aguish districts, however, and in warm climates larger doses are required. In the aguish districts in Italy, in the Roman territory, and the Maremma, small doses are inadequate and according to Professor Speranza twenty to thirty grains were given before the desired result was obtained. In America Dr. Perrin gave six, eight, or twelve grains daily. In the island of Santa Cruz Stedman says it is requisite to administer it in doses of ten, twelve, or fifteen grains daily. This corresponds with the observations of Jackson on the ague of North America.

The bismuthate is thought not to act so beneficially in remittent fever, and still less so in continued or in intermittent.

In remittent fevers when the
Remissions are well marked (and if they are not they may be made so, by administering an aperient and then an active cathartic), it may be given nearly with an equally beneficial result. In continued fevers it produces little or no benefit except when distinct remissions occur, as particularly in the febrile disorders of children and where no obstacle exists from the presence of irritation in the stomach or intestines; in such cases it is almost as perfect a febrifuge as in ague.

In all cases our object should be to render the disease as remittent as possible. This is attained by bleeding, or such means as each individual case may require. Dr. Dundas and others, both in Liverpool and Manchester have employed Quinine with marked success in Typhus Fever. Dr.
Dr. Tendra's plan was to give eight or ten grains four or five times a day in an ordinary case of typhus. Under this treatment the tongue rapidly cleared and the headache abated; he believes that without the drug to give in full doses, there will not be the same beneficial result for when three or four grains were given even four times a day the same benefit did not follow. This plan of treatment was adopted in the Liverpool Fever Hospital where there are one hundred and fifty beds, in the West Derby Fever Hospital with fifty beds, and the Manchester Union Fever board, where eighty patients were so treated and with apparently great success. From the treatment of the previous number of patients the following remarks were arrived at—
not that in many cases a threatened attack...
attack may be cut short by the
exhibition of full doses of quinine.
2° That the duration of the disease
is shortened, and many cases (which
would in all probability be hope-
less under other treatment) recover.
3° That the treatment ought to be
perpetuated for some time.
4° That even when the tongue is
loaded and the head considerably
affected, quinine is not contraindi-
cated.
5° That when there is cough, and
this is clearly connected with
some affection of the lungs or
bronchial tubes, the drug should
at once be given up until its
abatement.

Dr. M. Retzius recommends the use
of quinine as an antiperiodic in
puerperal fever. He was led to do
from observing the effect following
its administration in an epidemic
of the disease which prevailed
during the year 1829 in the General
Lying in Institution at Stockholm. The
disease began in the month of
September; in November and December
it somewhat abated; but in the Spring
it had so increased in virulence, that
the wards of the Institution were
closed for two months. Nearly all
the inmates suffered from the con
sequence. The mortality was thirty-three
per cent. Retzius gave each of
the patients labouring under the
disease a scrope of the sulphate
of Quinine daily, and the disease
subsided.

It is also used with much benefit
in certain neuralgic affection, when
periodic and regular in their oc-
currence, especially those forms
which affect the head.

In phrenmatism (of a chronic character),
headache, amaurosis, stricture, &c.
recurring at regular intervals,
quinine is found as efficacious as
in intermittent fever.

Within a few years the plan of giving enormous doses of sulphate of quina in acute phrenatism was proposed by Mr. Braquart of Paris and with the most surprising results, the disease being almost as promptly cured as intermittent by the same remedy. From a drachm to a drachm and a half being given daily in divided doses. It appears however that the brain becomes violently affected when the amount administered is so large, but there is no doubt it proves a very useful remedy when given in moderate doses.

As a tonic quinine is a very valuable remedy in certain forms of dyspepsia especially those depending upon enfeebled digestion. It increases the appetite and assists digestion. In debility attending insouciance from acute or chronic disorders
it is an excellent tonic; but where debility occurs connected with chlorosis or diminution of the red corpuscles of the blood, it would be better to exhibit some of the Chalybeates.
In certain forms however of Dyspepsia, where there is unusual irritability of the stomach and intestinal canal, Sulphate of Gunione should not be administered as it only increases the previous irritation.
Dr. Stroncken, a Dutch physician from an experience of twenty two cases, has shown the use of the Sulphate of Gunione to be attended with the best results in many cases of Pulmonalis as well as in tubercular deposits elsewhere; he considers it especially useful for married women and children.
The observation of a good many cases which I have treated in this manner in this country has convinced me of its great value.
In jaundiced ophthalmia, particularly in children, no other constitutional remedy produces so good effects as quinine.

In gangrene of the lungs quinine has been used with great success by several eminent practitioners. Hofland of Vienna uses it in conjunction with the inhalation of turpentine. But in some cases the latter cannot be borne.

I was informed lately by a country practitioner that he had a patient under his care seventy-five years of age with extensive gangrene of one lung whose life was evidently prolonged by the quinine alone. He was apparently moribund when it was first commenced.

Dr. Cochran of America has shown that quinine and its salts exercise an influence on the uterine in hastening the menstrual period, and consequently he recommends that...
that its use should be avoided, if possible, during pregnancy on account of its tendency to produce abortion. Lastly, Sulphate of Quinine may be administered by the Endermic method. In this way so small a dose as six grains has cured violentague even when the remedy had failed when given by the mouth, but when so applied it is said to produce excessive inflammation and even sloughing. Sulphate of Quinine is supposed to have the effect of promoting the action of certain other remedies. By the action of mercury seems to be greatly accelerated. It has also been supposed by some to increase the action of alises. I have myself administered it in conjunction with iodide of potassium in chronic hepatitis in connection with a general anaemic condition with great relief to patient.
I shall now enumerate briefly some other prominent facts in therapeutics which I find it impossible to notice at greater length and among these I must first mention the remarkable power of Cod Liver oil in tubercular disease, causing temporary improvement in almost all cases in which it is fairly tried, and a permanent cure in not a few. It is also highly useful in many cases of chronic rheumatism and gout, but these topics are so ably discussed in Dr. J. H. Earle's well-known treatise on Cod Liver oil as to require no further comment. It is also stated to have been used with success in some cases of Diabetes, Mellitus.

The great value of the preparation of iron in all cases of anaemia has been long recognised, but its use in the form of the tincture of the arsenite or trypsinola for which the profession...
profession is indebted to Mr. G. H. Bell of Edinburgh, has been known generally to the profession for the last five or six years only. All who have tried this remedy in erysipelas (and I have frequently so treated these cases) have been astonished at the rapid improvement which has followed its use.

It is also a remedy of great value in cases of sloughing (acute plague-dema) along with the local application of nitric acid; in some forms of inflammation it is also found of much service.

The power of Iodine and its compounds in causing the absorption of serpulous and syphilitic swellings is undisputed; but I cannot agree with Mr. Headland and others in thinking that it has no power over other swellings unconnected with these states of system, as I have seen organised inflammatory exudations removed.
removed under its use.
The beneficial effects of the preparations of Colchicum in gout, and
some cases of rheumatism, by increasing
the amount of uric acid in the urine,
is a fact now almost universally
received.
I might add many other undoubted
instances of the power of medicinal
agents over various other forms of disease,
but I trust I have adduced a suffi-
cient number to show that a recent
untitled writer, Mr. Markham, does not
estimate sufficiently highly the po-
tition of modern therapeutics, than
he says, "more faith is placed in
the power and efficacy of therape-
tic agents as regulating and Controll-
ing the course of many diseases than
the reason of the case warrants us
in ascribing to them."