Observations on Antifebrin or Acetanilid

This substance has been called Antifebrin by A. Cahn and P. Hepp. It has long been known as Acetanilid, or Phenylacetamide \( \text{C}_6\text{H}_5\text{NH} - \text{C}_2\text{H}_3\text{O} \).

Properties and Reactions:

Acetanilid or Antifebrin is a white crystalline powder, having no smell and a slight burning taste; almost insoluble in cold water though soluble in hot water, very soluble in alcohol and fluids containing alcohol, as for example wine. It melts at \( 112^\circ\text{C} \) and boils without decomposition at \( 292^\circ\text{C} \). It has neither acid nor basic properties, and resists decomposition by most reagents.

(Archiec de Pharmacie Oct 1886).

Solubility:

<table>
<thead>
<tr>
<th></th>
<th>Water</th>
<th>Spirit</th>
<th>Other Menthol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-200</td>
<td>1-10</td>
<td>1-18 boiling water</td>
<td>1-40 glycerine</td>
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(Mr. N. Hebling F.C.S. in the Modern Materia Medica copied into the Medical Annual p. 13 by Brynville W. R., year 1892.)
Preparation.—By the action of glacial acetic acid upon anilin
(Larmer Brunton’s Text-Book of Pharmacology, Therapeutics and Materia Medica Third Edition p. 825.)

Relation of Anilinium to Benzene.—
Prof. Kekulé’s graphic formula for Benzene:

\[
\begin{array}{c}
\text{H} \\
\text{H} \\
\text{C} \\
\text{C} \\
\text{H} \\
\text{C} \\
\end{array}
\]

Anilinium or Aniline may be represented thus:

\[
\begin{array}{c}
\text{N} \\
\text{H} \\
\text{H} \\
\text{C} \\
\text{C} \\
\text{H} \\
\end{array}
\]

For convenience and greater distinctness, he leaves out the symbols for Carbon and Hydrogen where they do not differ from the original Benzene hexagon, and only fills in those which show the replacement for example the abbreviated form for aniline is as follows:

\[
\begin{array}{c}
\text{N} \\
\text{H} \\
\text{C} \\
\text{C} \\
\end{array}
\]

Aniline may be regarded as benzol \( C_6H_6 \)
in which \( H \) is replaced by Amidogen \( NH_2 \).
It may therefore be called Anido benzene or Phenylamine being the group \( C_6H_5 \) and benzol being theoretically its hydride \( C_6H_5 \cdot H \) or aniline may be considered as Ammonia \( NH_3 \) in which one H is replaced by Pheny1 so that aniline may be considered an organic ammonia and in fact it is both from its behaviour and its constitution.

\[
\begin{align*}
\text{Ammonia} & \quad \text{Aniline} \\
\end{align*}
\]

Acetanilid (Antifeberin) is produced when aniline is acted upon under suitable conditions. One hydrogen is then replaced by the monovalent group acetyl, \( CH_3 CO \) thus:

\[
\begin{align*}
\text{Aniline} & + \text{Acetic acid} = \text{Acetanilid} + \text{Water} \\
C_6H_5NH_2 & + CH_3CO\cdot CH = C_6H_5NHCH_3CO + H_2O
\end{align*}
\]

(From a paper read before the British Pharmaceutical Conference by Dr. John Hodgkin F.C.S., F.R.S. and copied in the Medical Annual for 1892 p.7 by Percy Wilde M.D.)

**Dose.** – 1 grammes to 1 grammes.
Aug 14, 1886.)

**Note.** – I have generally given from 3.
10 to 12 grains in the adult. Once however I gave 22 grains to a female patient about 52 years of age by mistake in weighing by gas-light. I thought of giving 12 grains, but had another 10 grain piece in the pan of the scales, of which I was not aware at the time. When I saw my mistake on the following morning I expected to find the patient dead, but to my joy I found her very much better. The pleuritic pains from which she suffered having entirely disappeared and did not return. She made a good recovery.

On referring to the British Medical Journal for March 31st 1894 p. 651 I find that Surgeon-Captain R.J. Macnamara, M.D. took himself two doses of 20 grains each with an interval of not more than three hours for Sciatica. He noticed slight difficulty of breathing, fulness and throbbing in the head, but no diaphoresis. The symptoms were anything but alarming and did not prevent him moving about, but although he met several people when in this condition only one person remarked any flushing of the face or unnatural colour. Dr. Macnamara was induced to try these large doses by reading of a patient under Dr. Austin Flint at New York having left the hospital Cured of Sciatica after two doses of Antifebrin of 20 grains each
Comparison with Antipyrin.—

A quarter of a gramme of Antipyrin is said to have the same effect as one gramme of antipyrin.

Mode of Administration.—

1. In powder licked off the spoon followed by a draught of cold milk.
2. In effervescing granules manufactured by Bishop of London containing 5 grains of Antifebrin to the drachm and dissolved in cold water.
3. In tablets or tabloids manufactured by Burroughs Wellcome of London.
4. In tinctura aurantii or some other pleasant tincture.
5. In wine or spirits (an objectionable method).

Physiological Action of Antifebrin

a. On the lower animals

"Weill showed that in doses of 0.05 gramme per kilogramme body weight, Antifebrin was free of all dangerous action; in doses of ten times that amount it was toxic causing a very extreme fall of temperature twitchings of the muscles and death. This proportion of dose to body weight Prof. Cash found to be exactly correct for fowls recovery occurring in all cases in which less than 0.04 gramme per kilogramme had been administered."

(British Medical Journal p.978 Nov. 3rd 1888.)
The three curves of the temperature that (Fig. 3) show fairly the effect of Antifebrin in the case of pigeons. The amount administered varied from 0.048 grammes per kilogramme body weight (Continuous line) to 0.24 grammes (Broken line). The fall is in each instance proportionate to the dose. The effect produced by one decigramme per kilogramme (Dot and dash line) is relatively more satisfactory than that by 0.24 grammes. In all cases it will be observed that the reduction of the normal temperature persisted for several hours.

The rapidity of the initial action is sufficiently apparent though the time of greatest reduction of temperature is curiously enough somewhat later in the case of the medium than in that of the small dose. The lowest temperature here recorded was in the case of the large dose 35 minutes after administration. The uppermost curve shows no tendency to return to the original level at the expiration of the observation whilst the lowest showed a slight tendency in this direction which may probably be explained by the extensive initial fall.

(Prof. Buxh’s address before the British Medical Annual Meeting at Glasgow Aug. 1858, reported in the British Medical Journal Nov. 3-1858, p. 978.)
How Antifebrin acts as an Anti-
pyretic

Assuming that it acts in the same
manner as antipyrin another member of the
aromatic series, Bettelheim would conclude
that it caused loss of heat by its action
upon the cutaneous circulation. Van Hoorden
however pronounced in favour of an action
upon the seat of heat production rather than
upon an increased loss of Caloric from the
surface of the body, for after he had cut
out the action of secretory cutaneous
nerves by atropine, he found that the
fall of temperature was not arrested
by suspension of chilporeisis.

Experiments of Sawdoski per-
fomed under the direction of Bethin
in St. Petersburg with Antipyrin.

"These experiments show that the
theory which supports a central action
of the drug is in part a correct one.
Sawdoski recognised a rise of blood pres-
sure equalling one-twentieth of the total
when antipyrin was administered to dogs in
the proportion of 0.3 gramme (.5 grains)
per kilogramme weight of the animals.
He found that the excised heart of both
mammals and amphibian contracted more
powerfully when small doses of the drug
were added to a circulating nutritent
fluid. On the other hand perfusion of a
similarly medicated fluid through the
vessels of the limbs caused in them a positive
dilatation. On the vascular system the action of the drug appeared to be chiefly upon the heart, probably upon the sympathetic motor ganglia. His thermometric observations showed him that whilst peripheral or cutaneous temperature rose at first after antipyrin as a result of vascular dilatation the internal temperature fell greatly. This fall occurred even when the animal experimented on was kept in a warm chamber or enveloped in cotton-wool. In order to localize the central effect of the drug Pawlowski divided the Cord above the atlas and then injected antipyrin. After such a section he found no fall of temperature was produced by antipyrin, though respiration and circulation were actually continued. Sections of the brain posterior to the Corpus striatum had the same effect, but when anterior to the Corpus the drug was found to preserve its action.

Now the heat-regulating centre described by Aronson, Sacks, Richet and Ott is to a large extent located in the Corpus and assuming the correctness of the thermometric record, the conclusion seems justified that it is to a large extent upon this area that the drug acts to its influence and that its action is anti-thermoregic.

That the drug is greatly reduced in its activity by section of the Cord at the atlas may probably be admitted but Prof. Cash venture to doubt whether its activity is altogether abolished by such a proceeding as surface.
Cooling has been shown by the employment of M. J. and Eichhert's radiometer to
take place as the result of the action of
antipyrin. This radiation would still occur
even after the section and therefore a
thermolytic effect would be superadded.
If Pawlowski's observation is correct that
the same section at the atlas which hin-
ders the action of antipyrin also prevented
the fever caused by injection of septic
material into the veins—we should have
one clear indication for the treatment of
fevers of such origin through their cause
might be left unattended by the drug."

(Prof. Cash's address, 1858)


On the Spinal Cord—its reflex irritability being greatly
impaired. Ultimately anesthesia is pro-
duced. (Prof. Cash.)

On Motor Nerves—Their irritability
is greatly reduced or even suspended.

On Muscles—Muscular irritability
and Contractility are markedly di-

On Blood Vessels. They are Contracted

We'll consider that this contraction is
of central origin. (Prof. Cash)

On the Blood.—By large doses
methemoglobin becomes abundant
whilst oxyhemoglobin is greatly
reduced. It is questionable however,
in how far the presence of an impurity

9.
may lead to this result and to the accompanying cyanosis which was observed by Lee and others. Antifebrin certainly diminishes the number of the coloured corpuscles but it requires a long administration of large doses to produce a condition of anaemia. Even if this should occur it proves very amenable to treatment. (Prof. Cash).

On the temperature: It is an antipyretic of the first order. A normal temperature may be rendered sub-normal by its action but it has been estimated that one-eighth part of the dose only which is requisite to produce a similar fall in absence of fever is needed to effect a reduction in Case of pyrexia. The action of the drug is rapid usually beginning to manifest itself within an hour and not infrequently within twenty minutes; its maximum effect is reached in four hours and eight to ten hours the temperature tends to regain the original level. it may even pass beyond it but in this respect it agrees with most other antipyretics. (Prof. Cash).

On the pulse: Slowed (s0)

On the respiration: Slowed (s0)

On the kidney: Diuresis occurs (s0)

On arterial tension: Raised (s0)

On the skin: Occasional diaphoresis
On the Urine. — Distinctly increased in volume, contains the original body in part unchanged, in part split up and variously combined (Prof. Cash.)

On Nutrition. — It diminishes the physiological change of glycogen into sugar in the liver and in the muscles. (Lépine and Porteret)

Experiments of Batten and Bokenheim with Antipyrin. — Batten and Bokenheim thought that Antipyrin acted on all parts of the nervous system, mainly in the spinal cord but also in the brain and motor nerves.

The symptoms have a strong resemblance to those of lateral sclerosis and they think that the action of the drug may be localized in the lateral columns of the cord. They found in cats and guinea pigs experimented upon, spastic rigidity of the hind limbs; and in all animals experimented upon rigidity was a marked symptom. Further in the first-mentioned animals this symptom appeared to come on with any attempt to use the limbs just as is the case with a patient with lateral sclerosis. (Medical Annual 1890 p. 12.)
Physiological Action of Antifebrin on Man (Continued)

Remarks by the writer:
1. From the feeling of well-being experienced by patients to whom antifebrin has been administered, I infer that it acts upon the sensory areas of the cerebral cortex. (See p. 16)
2. From its beneficial action in catalepsy and clonic spasms, I come to the conclusion that it acts also on the motor areas of the brain as well. It may also act upon the lateral columns of the Cord. (vid. pp. 18-19)
3. From the relief it gives in neuralgia and headache, I conclude that it acts on the sensory nerves. (vid. p. 18)
4. Since it acts as a local anaesthetic, it acts upon the sensory nerve endings. (vid. pp. 22-23)

Dangers of Antifebrin

Antifebrin is a much more powerful drug than antipyretin and therefore has to be given in much smaller doses. Its drawback is the tendency it has of producing cyanosis or Collapse, and in a case recorded by Dr. Mayer of Hildesheim these symptoms occurred in a strong girl of thirteen after two doses of about four grains each taken within three quarters
Dangers of Antifebrin—Continued
of an hour. After the second dose
though she lost the severe head-ache
which had induced her to take the double
quantity she became blue in the face
and Complained of great faintness,
palpitation, and prostration. The
heart’s action was certainly increased
and as she lay in bed it was noticed
that her legs were much colder than
usual. As the acetanilid had appar-
ently produced such undesirable
symptoms, Dr. Meyer ordered that
no more should be taken. However
one day when he was away the pain
in the head came on so severely
that the girl again disobeyed his
instructions and took the remaining
portion of the powder, nearly seven
grains in two doses within an hour
or so of one another. Again the pain
was cured but on Dr. Meyer’s return
he found a considerable amount
of Cyanosis which, notwithstanding his
persistent use of stimulating measure
did not begin to improve for five
or six hours and did not disappear
for twenty-four hours

(Lancet June 8th 1889)

Stachiewicz extols Antifebrin
above antipyrin and there is no
doubt it is more effective in reduc-
ing temperature.
Advantages of Antifebrin.

Summing up by Prof. Cash.

Advantages of Antifebrin over Antipyrin.

1. The smaller dose in which it is operative.
2. The steadier and more continued action.
3. Its comparative freedom from the danger of causing collapse.
4. It is much cheaper, as it is procurable in the open market, whilst antipyrin is not. Against it we have merely its insolubility. This is readily overcome by prescribing it together with some pleasant tincture as the Tinctura Aurantii.

I agree with the above summing up of Prof. Cash though it is said that most practitioners who have used antifebrin extensively do not agree with the third of Prof. Cash's advantages.

In the General Conclusions as regards the freedom from ill effects of antipyrin, antifebrin and Phenacetin given after a collective investigation amongst practitioners with Prof. Beech as Chairman and Dr. Hunter as secretary the order is: 1. Phenacetin, 2. Antipyrin, 3. Antifebrin.

(Brit. Med. Journal Jan 13th 1894 p. 90)
Remarks.—The report states however that the practitioners who administered antifebrin seemed to think that it had the same power as antipyrin.

**Antifebrin Contrasted with Aniline.**

Action of both on dogs and rabbits. Repeated trials on dogs and rabbits have shown that antifebrin stands in remarkable contrast to aniline C₆H₅NH₂ with which it is chemically so nearly connected: even in large doses it does not seem poisonous. Animals in a normal state are not influenced by it.

(Cahn and Hepp Archiv der Pharmacie Oct. 1886.)

**Action of Antifebrin on Man**

(Cahn and Hepp Centr. f. Klin. Med. Aug. 14, 1886)—Antifebrin reduces the temperature rapidly; the effect lasting from three to seven hours according to the size of the dose. The pulse is slowed and the patient often falls into a quiet sleep. No vomiting or diarrhoea has been noticed but there is some tendency to collapse.
Clinical Experience of the
Writer of Antifebrin

General observations.—My own observations lead me to state that the pulse and respiration are slowed by antifebrin. That diaphoresis is the rule although I have known persons who never perspired under its influence, but in these the quantity of urine secreted was increased and there was frequent micturition. It did not act the same in the same persons always, as sometimes it would cause copious diaphoresis whereas at other times there was no perspiration produced. The patients as a rule fell into a quiet sleep after it when they could not sleep before. So far from causing vomiting it arrested retching and vomiting when present. The cases in which it caused slight collapse are very few—only three or four in several hundreds—as I have used it often since the beginning of the year 1887. It produces unrestedness of the gait and I recommend patients to go to bed if not in bed already after a dose of it. It induces a feeling of being at peace with oneself and with all the world, and it does not leave any head-ache after the
patient has awakened from his sleep. Even where headache happens to be present, it is removed by the drug. I have not seen the erythematous rash described by some writers, and therefore I conclude it must be rare.

Failure to reduce temperature due to abscess—

I tried it in two cases of abscess of the hip; where there was high temperature, great pain, and loss of sleep. It lessened the pain, and induced sleep, but failed to reduce the temperature in one case. When the abscess was opened, the temperature afterwards went down rapidly. In the other it failed to induce sleep; and brought on collapse which passed off, but it failed to reduce the temperature. After the abscess was opened in this second case, the temperature was reduced, and the patient could sleep.

Superiority of Sulphonate in Acute Mania—

I tried 12 grains of Antifebrin in a case of acute mania with failure to sleep but without effect. On the following night I gave 20 grains of Sulphonate. The patient, an old man about 65 years of age.
I slept all night and was quite rational on the following day. The same dose was given on the following night, and the symptoms passed away entirely, and did not return for two years. When they did return I gave the same drug again, and it acted quite as efficaciously as on the first occasion. This man was subject at intervals to epileptic seizures.

Antifebrin in Hysteria with Catalepsy and Aphonia

A married woman Mrs. M., about 30 years of age was suddenly seized with Catalepsy of the two lower extremities with aphonia. I applied a fly blister over each ovary and gave 10 grms of antifebrin. On the following morning she could speak and could move both limbs. Neither the catalepsy nor the aphonia has returned during the last three years during which she has been under observation.

Aphonia with Continual movement of the right arm.

Mrs. W. aged 25 was seized with high temperature aphonia, with continual movement of the right arm up and down the chest.
with inability to keep it still. A fly blister was applied to the
nape of the neck and left on for
twelve hours and two doses of
10 grains each of antifebrin given with
an interval of six hours. By the
following morning the temperature
was reduced to the normal. The pa-
=ient could speak and had full con-
=rol over the right arm.

**Antifebrin in Clonic Spasms**

Mr. G., aged 52 was taken ill
with high temperature and clonic spasms
of the right side of the body. Two
doses of antifebrin of 10 grains each
with an interval of six hours were
given. On the following day the
high temperature and the spasms
had disappeared and the woman
expressed herself as practically
well.

**Quinine and Antifebrin**

Contrasted in Typhoid Fever

My experience of the use of
quinine in the early stage of typhoid
fever is that it does positive harm.
Even when the tongue has begun to
clean and the patient to allappa-
vances is getting better if quinine
is given it is found that the patient
has an increase of fever upon the
tongue, and complains of head-ache.
deafness and noises in the ears. But when the high temperature has left the patient, then quinine can be given, with advantage to assist in removing the debility which remains. I have found also that quinine has no effect in reducing the temperature of typhoid fever. With regard to Antifebrin, I have found that doses of 5 grains with an interval of six hours will reduce the temperature from 103° F. or 102° F. to the normal and keep it so if the drug is continued. But I have also found that it has no effect upon the duration of the illness. It will also ease the severe head-ache of typhoid fever, and give a refreshing sleep when the patient is totally unable to sleep without some soporific. The only disagreeable feature with regard to the administration of it is the copious diaphoresis which it induces.

**Antifebrin in Influenza.**

As a rule it eases the severe head-ache, retching, and shivers of influenza within about twenty minutes of administration, and the high temperature is reduced to the normal within about four hours, and the temperature in this disease does not ascend again when the drug is discontinued as in the case
of typhoid fever. In the severer cases of influenza with delirium I have had to blister the nape of the neck and sometimes both temples in addition to giving antifebrin before the patient has been relieved of the severe symptoms. So great a faith have the people of this place in it after the first epidemic of influenza that when they have similar symptoms they send for a "Sweating powder" or "powder like sugar" as they call it; and if the delirium persists and calomel and caesarian compositae were given them, they would bring it back. For the weakness which remains I have been in the habit of prescribing:

Rp.
Lig. ferri perchloridi 3i
Glycerini 3i
Aquae ad 3Fr. m.
Misce. muta mistura

Signet.- One table spoonful to be taken three times a day after meals.

Antifebrin in Sciatica.
I am not able to say that it is of much if any permanent use in sciatica but it seems to give relief from pain temporarily. Indeed I have tried alkaline bicarbonates, salicylate of soda and iodide of potassium in this disease without benefit, and it leads me to
think that internal remedies are of very little use. I have found several small fly blisters in the course of the sciatic nerve give some relief. But the best remedy which I know of and which attains =fly has been successful in my hands in four cases after months of internal remedies and blisters and other Counter-irritation has been the injection of 20 minims of Chloroform in 30 minims of sulphuric ether into the substance of the sciatic nerve. The pain is rather severe at the time being compared by the patient to an electric shock travelling along the nerve to the sole of the foot. The pain lasts for several hours and it is well to put the patient in bed immediately after the injection. I have seen one man who had left the neighbourhood return after a period of years to get the injection from the benefit he had received during the first attack. Two injections each were given in two cases and one each in the remaining two to effect a cure.

Antifebrin as a local application—

Dr. Newth (Lancet April 6th 1889) has found antifebrin of benefit in relieving pain as a local application
He says: "My usual plan is to prescribe it with laudanum or vaselin in the proportion of 20 grains to the once combined with other ingredients that seem applicable to special cases. In obstinate ulcers it soothes the pain and subsides the inflammation. In psoriasis combined with some mercurial preparation it acts like a charm. I have also tried it in erythema, erysipelas, eczema, herpes, urticaria and other complaints associated with considerable irritation and have found it a most useful adjunct to suitable remedies."

The writer has not tried the drug externally in any case.

**Antifebrin cutting short an attack of pleurisy and pneumonia.**

I have seen this in several instances where patients have been seen early soon after the rigor before the development of physical signs; and even when there is a lancinating pain in the chest on drawing the breath, quick pulse, hurried breathing, and friction on listening to the chest, with high temperature. In these cases I give 10 grain doses of antifebrin with 10 grains of Calomel if the bowels are
bound), to be repeated in six hours if the bowels have not been moved. If there is severe pain in the chest by drawing the breath a fly blister is applied for twelve hours. By the next day it is usually found that all the symptoms have vanished, and that they do not return.

Dr. Broadbent, at the British Medical Association Annual Meeting (1890) after describing the value of the cold bath in Controlling hyperpyrexia said "I need hardly remind my hearers that antipyretic drugs are of no avail in such an emergency, and in typhoid fever I have seen nothing but harm from their continuous employment. They afford an easy triumph to the medical man, and he may persuade himself as well as the sufferer and his friends, that the diminished febrile heat is a step towards recovery when the remedy may not only lower the temperature but depress the patient. While however I deprecate the indiscriminate employment of antipyretics and its congeners I must not omit to mention that at the outset of pneumonia given early and in repeated doses it sometimes appears to cut short the attack.

24.
The opportunity is soon after the rigors and long before the development of physical signs. I have seen this in old people in whom an attack of pneumonia must have been fatal.

**Antifebrin in Phthisis**

In the case of a married woman in the last stage of phthisis who suffered from severe head-ache I prescribed 5 grain doses of the drug to be repeated in 24 hours if the head-ache persisted. As a rule one dose was sufficient and the head-ache did not return for several days. The woman expressed herself as better in every way but complained that the drug had caused free perspiration, it had no effect on the course of the disease.

**Antifebrin in Colds**

I have found that in persons who complain of being chilly and having a high temperature with head-ache and pains all over the body that a 10 grain dose given at bed-time gives the patient a thorough rest, that all the pains have disappeared by the morning, that the patient feels refreshed and that the stomach and bowels

25.
are undisturbed. It does not bring on vomiting as the pulvis ipecacuanhae Compositus frequently does - the compound ipecacuanhae powder always comes back when I take it myself - but it acts as a sedative to the pneumogastric nerve when there is a tendency to retching and vomiting. Neither does it cause Constipation as do opium and its preparations.

**Antifebrin in Peritonitis.**

I have found the drug of great value in peritonitis. Here I have found it best to combine it with pulvis ipecacuanhae Compositus thus:

\[
Pulver. Spec. Amp. 9/8
Antifebr. 9/5
misc. mixt pulvis
\]

Eg. - One powder to be taken every six hours.

This is combined with the application of tincture of menthol to the abdomen.

**Antifebrin in Neuralgia of the Fifth Nerve.**

In neuralgia of the Fifth Nerve it very seldom failed to give relief, and it very often gave temporary relief in tooth-ache even when it depended on caries.
of the tooth. Very often the tooth-ache returned on the next day, and the tooth had to be extracted before permanent relief was obtained. In facial neuralgia I have found great benefit from painting over the seat of pain the following preparation:

Rp.
Spir. Ammon. aromat. 3i
Chloroformi 3i
Tinct. Atropini 3i
Tinct. Belladonna 3i

Mixce frat linimentum

Sign. — To be painted over the seat of pain with a camel hair brush, taking care that none enters the eye.

The above preparation I have found very useful in painting over inflamed joints when due to rheumatism.

Antifebrin in Puerperal Fever:

I have found the drug very valuable in more than one case of puerperal fever. When there is much pain in the bowels I find it advisable to combine it with hubris ipecacuanha Compositio and local counter-irritants in the shape of turpentine staples.
and fly blisters.

Case—

Mrs. M. was confined on July 26th 1890 — primipara — natural labour — progressed fairly well until Aug 2nd when she got up. On the 3rd temperature rose to 102° F. and kept ranging between 102° and 103° till Aug 10th — when it went up to 105° with very quick pulse and breathing, and delirium. Antifebrin given in 12 grain doses every six hours. Temperature on the following day (Aug 11th) 103°. Acetanilid Continued. Temperature on the 12th 101°. Acetanilid continued. Temperature on the 13th 99°. Acetanilid continued. Temperature on the 14th — normal. Acetanilid given up as soon as the temperature reached normal. The temperature did not ascend again. She was put on diuretic hydrochloric acid and infusion of genian. Recovered.

Note — It is right to state that I lost two cases of puerperal fever who were treated with Antifebrin.

Antifebrin in Meningitis

I treated successfully four cases of meningitis in children — one child under twelve months.

28.
who recovered, but did not recover his hearing or speech. He could articulate two or three words before he was taken ill but could say nothing now in his third year. He was treated by 1 grain doses each of Calomel and antifebrin every six hours. He had several attacks of convulsions. The nape of the neck was blistered and the whole body was sponged with cold vinegar and cold water in equal quantities whenever the temperature got very high—sometimes as high as 105° F—accompanied with unconsciousness. He had a purulent discharge from both ears.

The other three—one girl and two boys—were between two and three years of age. They were also treated with ½ grains of antifebrin and the same quantity of Calomel every six hours. All of them were unconscious for days. Blistering was applied to the nape of the neck and the temples and the skin sponged with cold vinegar and cold water when the temperature got very high. They three recovered.

Antifebrin in Measles.
Antifebrin in Measles.

During an epidemic of measles I have observed that when one or more children of a family had a rash, and another was taken ill with the same symptoms with the exception of the rash, that when antifebrin was given to the child without the rash the temperature went down and the child apparently got well without developing the rash. But in about a fortnight after the first symptoms the same child was taken ill again and this time developing the rash and having the same symptoms over again. This leads me to think that the drug has the power of delaying the appearance of the rash. I have not seen or heard that the same phenomenon has been observed by anybody else.