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## NOTE ON THE USE OF COCAINE IN HAY FEVER,

BY ROBERTS BARTHOLOW, M. D., LL. D.,

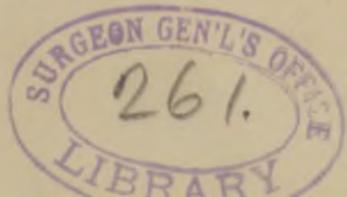
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The remarkable success which has attended the use of Cocaine in cases of Hay Fever, is one of the most interesting developments in the therapeutical history of this surprising remedy. The curative power thus exhibited, throws a clear light on the pathology of this singular malady. The various theories of the pathogeny of Hay Fever may be resolved into two: one, that its manifestations are local, and due to the deposit of some irritating material; the other, that its real origin is systemic, a peculiar state of the nervous system being necessary to its production, and secondary to this, a disturbance in the peripheral expansion of the nerves distributed to the broncho-pulmonary mucous membrane. There can be little doubt that both theories contain a truth, but they do not have the essential requisites of a satisfying theory, in that neither one reconciles all the facts.

Until Blackley came forward with his experimental investigations, the theory of a local cause had no other support than vague surmises. When he demonstrated that the pollen of certain plants possessed the precise irritating qualities to excite the peculiar local disturbance, the case seemed to be closed in favor of the local-action theory; but it was soon seen that there are other necessary elements in the morbid complexus. We owe, more especially, to the late Dr. George M. Beard, the demonstration of these elements and the correlation of the phenomena of nervous origin.

As all persons in any given community are alike reached by foreign bodies in the air, it is obvious that those stricken with Hay Fever must possess a special susceptibility to the action of the irritating cause.

To produce Hay Fever, a peculiar type of nervous system is necessary. In such subjects, the contact of the pollen of certain grasses, or of certain other irritating matters, as for example, powdered ipecacuanha, is necessary. These conditions being present, the mechanism of the disease is, as follows: a greater or less congestion of the nasal mucous membrane, and implication of the terminal filaments—end organs—of the fifth nerve and of the sympathetic, ensue; hence, the swollen state of the membrane, the acrid and abundant secretion (catarrh) the subjective distress and the formation of "sensitive areas." The sneezing, the asthmatic symptoms, and other nervous phenomena



are purely reflex effects, readily explained by the anatomical relations of the affected nerves. Vulpian had, long ago, shown that ablation of the sphenopalatine ganglion—a centre of the sympathetic nervous system—was speedily followed by a profuse catarrh of the nasal mucous membrane. The nucleus of the fifth nerve has close physiological relations, if not actual commissural connections, with the nucleus of the pneumogastric nerve. Hence, a reflex disturbance originating in the terminals of the fifth, may thus involve the terminals of the pneumogastric and its associated nervous connections, causing amongst other nervous disturbances, asthmatic symptoms.

A remedy for Hay Fever to be curative or powerfully palliative, must accomplish one or both of two objects: it must arrest the local irritation; it must prevent the reflex disturbance. It must so affect the nasal and faucial mucous membrane as to remove any special susceptibility that exists, and put the individual so affected in the state of the majority of the population who breathe with impunity, air charged with irritating materials. Have we such a remedy? We can conceive of a germicide, or antiseptic, sufficiently powerful that if efficiently applied in time, the initial disturbance may be prevented or arrested. Helmholtz, and a few imitators, have succeeded by a happy application to the nares, of a solution of quinine. Unfortunately, the numerous agents, so perseveringly employed in this way, have in almost all instances failed in any permanent effect. It remains to be seen how far cauterisation of the sensitive areas, so admirably advocated by Dr. Sajous, will prove curative. This method is widely intended to arrest the transmission of irritating impulses originating in the nasal mucous membrane.

Since preventive measures and the arrest of the initial disturbances have hitherto proved migatory, the attention of sufferers has been directed to means of relief for the more distressing symptoms. Until the powers of COCAINE had been made known, not much of a satisfactory character had been achieved, and the one remedy for the great army of sufferers, consisted in a complete change of the climatic conditions. At last, a peculiar mode of applying Cocaine, seems to have solved the problem.

Before Dr. Köller, of Vienna, had demonstrated the anæsthetic effect of Cocaine, laryngologists had used it to some extent to lessen the sensitiveness of the faucial mucous membrane. Nothing in therapeutics is more wonderful than the power of this agent to allay the sensibility of the nerves of the mucous membranes generally, and it is this, which Dr. Köller, especially showed. It naturally followed on this demonstration, that the agent would prove useful in all irritable states of the mucous membranes, and hence, when

the annual sufferings from Hay Fever began, the victims, especially when physicians, looked to Cocaine to give them relief. Unfortunately, the usual solution when applied, was useful chiefly in the milder cases, for the profuse discharge in the severer cases, either diluted the agent so far as to make it inactive, or washed it away before it could act on the part. Fortunately, some of our English colleagues discovered the value of Wyeth's tablets, or, as they prefer to call them, "tabloids," and already a mass of testimony has been offered, showing their extraordinary value in the relief of this malady. This agent thus applied, complies with singular completeness to all the conditions of the therapeutical problem, set forth above. It relieves that hypersensitiveness of the mucous membrane, which separates the Hay Fever victim from all other normal subjects. It allays the irritability of the end organs of the nerves, of animal and organic life, and thus, whilst it relieves the local distress, removes the congestion, and checks the secretion. It acts also, on the next link in the chain of morbid impressions, and arrests the wide-spread, reflex disturbances having their common point of transmission in the nuclei of the fifth, and pneumogastric nerves.

In using Cocaine, a compressed pellet or tablet, containing one-sixth of a grain, is inserted into the nares alongside the cartilage of the septum, and retained by closing the nostril, until it has time to dissolve and be applied to the surface generally. They can be repeated according to necessity, each nostril receiving them in turn. The experience thus far is, that very prompt relief is obtained, and only the occasional introduction of a tablet is necessary.

Besides the smaller tablets or pellets for nasal use, Messrs. Wyeth have prepared a *Cocaine Troche*, which is an elegant and extremely useful form, for the treatment of throat affections, for the relief of one form of Hay Fever, for Cough and Asthma, etc. It is an admirable remedy to allay the cough of phthisis, especially the dry and harrassing cough with scanty or no expectoration, which prevents sleep, causes regurgitation of food, and rapidly exhausts the strength. For this purpose, a troche is laid on the tongue toward the base, and allowed to dissolve slowly. Every practical physician will see the superiority of this mode of using Cocaine to the throat, over the present solution applied by a pencil. These troches may be utilized, also, to induce the necessary degree of anæsthesia, for various manipulations on the fauces.

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To illustrate the remarkable efficacy of the tablets of Cocaine, the subjoined experiences are selected out of the already numerous published examples.

# COCAINE TABLETS

IN

## HAY FEVER.

By CHAS. E. SAJOUS, M. D.

Instructor of Rhinology and Laryngology, Etc., Jefferson Medical College, Phila.

At the request of Messrs. WYETH & BROTHER, chemists, of this city, I have investigated the merits of the Hydrochloride of Cocaine Tablets, manufactured by them, each containing  $\frac{1}{8}$  gr. of the drug, as suggested by Mr. John Watson, of Westminster Hospital, London.

This method of application is doubtless the only one in which the physiological action of Cocaine can be obtained. I had previously tried the drug in solution, but could not obtain in any of the cases, sufficiently marked effect to warrant further use; in one case, it seemed to produce an unfavorable reaction and to cause aggravation. That it cannot be effective in solution is easily explained:—the great amount of secretion present so reduces the strength of the solution employed, as to render it comparatively inert. Used in tablets, the secretion forms the vehicle for the drug, and the membrane is thus thoroughly bathed with a powerful and effective solution. For the itching at the eyes, however, the four per cent. solution seemed to be admirably adapted, a drop now and then, in the inner canthi, not only relieving the itching, but reducing markedly the local congestion.

In the ten cases of hay-fever, (those chosen being of the worst type and all subject to asthma) in which the tablets were tried, four were under treatment by the galvano-cautery method, while the other six were merely resorting to palliative measures. The action of the remedy, however, did not seem to be

influenced by the organic alteration of the surface of the membrane, in the four cases in which this was being done. In *four* cases out of the ten, the results were most satisfactory; not only did the tablets arrest the nasal symptoms, but they seemed to have the same effect on the asthma. The following abstract from a letter will serve to demonstrate these facts: "They seem to have modified very materially the paroxysms of sneezing, and to have stopped almost altogether the acrid secretions from the nose. Their effect in relieving the asthmatic feature of the disease, was instantaneous." About the same remarks were made by the other three cases. In *four* other patients the symptoms were relieved, but not arrested. The nasal occlusion was greatly reduced, and the sneezing abated. In two of these, the intensity of the asthma was greatly diminished, the patients being able to sleep comfortably. In the *two* remaining cases, none of the symptoms were in the least influenced.

To any physician who has attended many cases of hay-fever, the record presented by Cocaine, administered in this manner, is certainly a very satisfactory one, and doubtless will lead him to consider this agent as the first on the list of palliatives. As to the cases in which the tablets were not beneficial, I am inclined to believe that the quantity of Cocaine in them was too small, and that a quarter, a half, or perhaps an entire grain of the drug would have operated satisfactorily. I would, therefore, suggest, that tablets of different strengths be made. Furthermore, it seems to me that an elongated shape, such as that of a bean, would facilitate greatly their manipulation and their retention in the nasal cavities.

In order to obtain the best effects, the tablets should be introduced in the nose every two hours, taking care not to use the handkerchief, during at least, five minutes after their introduction. I do not consider the use of cotton in the nostrils, necessary to retain the tablet in place; in fact, it is an objectionable measure, the cotton acting as an irritant.

[Reprint from the *London Lancet*, July 4th, 1885.]

# COCAINE

IN THE

## TREATMENT OF HAY FEVER.

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To the Editor of the *Lancet*:

SIR:—I am desirous, with your permission, of calling the attention to the value of Tabloids of Cocaine in the treatment of hay fever. I feel that I can speak with confidence on this point, as I have, for many years, been a sufferer from this distressing affection, and the observations were made moreover upon myself. The attacks in my case usually commence about the last week in May, and continue without intermission until the end of July, the discomfort and inconvenience experienced being so great, that, during the summer months, I am practically incapacitated for work. The most prominent symptom is sneezing, which comes on in paroxysms, and is liable to occur at any moment, night or day. The attacks are most severe and persistent, and are entirely uncontrollable, so that over and over again, I have been obliged to leave the lecture, theatre or a place of amusement, and go home and lie down. They are accompanied by great shortness of breath, during the persistence of which any exertion is impossible; the exhaustion is so great that the whole body is bathed in perspiration, and there is generally a feeling of faintness, accompanied by dimness of sight, and often a staggering gait, if any immediate attempt is made to walk. Other symptoms are itching and irritation of the nose, with smarting and tickling of the mucous membrane of the

nares and septum. There is an irresistible desire to violently rub the offending member with a coarse pocket-handkerchief, although painful experience has taught me that it ultimately intensifies the trouble and irritation, which return with redoubled vigor immediately after the application. At the same time, there is a copious secretion of acrid mucous, which acts as an irritant, and inflames the surface with which it comes into contact. The eyes are usually suffused with tears, and there are tickling and itching of the margins of the lids, which are pressed tightly together in the vain hope of obtaining relief. The hard palate burns and itches so intensely, that the tongue has to be forced backward against it in order to allay the irritation. All these symptoms are greatly intensified by heat or sunlight, and by dust of all kinds. The pollen of hay, either growing or stacked, is perhaps the most powerful exciting cause, but minute particles of any kind floating in the air will act in the same manner. Even the starch from a freshly washed and ironed handkerchief will suffice, unless carefully shaken out before being used. The susceptibility is so great that until lately no remedy which was tried—and the last one was a long one—appeared in any way to control the course of the disease. A fortnight ago, I was induced to use the Tabloids of Cocaine for the first time, and the relief they have afforded me has been so marked, that I cannot feel sufficiently grateful for the introduction of this remarkable remedy. One tablet, containing a sixth of a grain of the hydrochlorate, is slightly moistened in the mouth, and is then introduced into each nostril. They adhere without the slightest difficulty, and cause no pain nor irritation of any kind; but the relief is immediate and complete. During the last fortnight, I have used twenty-four tablets, and have been practically free from my old complaint, although I have spent much of the time out of doors and under circumstances, which, without my remedy, would have been impossible. I am grateful for the relief I have obtained, and am therefore desirous to lay this plain statement of facts before your readers, in order that it may be brought to the notice of my fellow-sufferers.

I am, sir, yours truly,

JOHN WATSON,  
Westminster Hospital, S. W., June 29, 1885.

[Reprint from the *London Lancet*, July 11th, 1885.]

## COCAINE

### IN THE

# TREATMENT OF HAY FEVER.

To the Editor of the *Lancet*:

Sir:—Having successfully employed Cocaine in some forms of this complex disorder, I can fully endorse the good report given of Cocaine by your correspondent, Mr. Watson, of Westminster Hospital. It is precisely in such cases as Mr. Watson graphically describes, from a personal experience, that Cocaine presents satisfactory results. But the fact must not be lost sight of, that this affection—"Hay Fever, Hay Asthma, or Summer Catarrh," as I have described it upon the title page of the first edition of my work on the subject published in 1864—shows itself sometimes in one form, and sometimes in another of a wholly different character. Troublesome as are the symptoms of hay fever in its catarrhal form, they are neither so persistent nor so difficult of relief, as those of the asthmatic variety of hay fever. In this latter, and unfortunately, very common class of cases of hay fever, Cocaine is useless, indeed its administration would imply a waste of time, so that for the prompt alleviation of asthmatic complications, we must still look mainly to lobelia and chloroform, nitre fumigations, and inhalations of sedative preparations, conjoined with appropriate general and dietetic regimen.

I remain, sir, yours obediently,

WM. ABBOTTS, M. D.

Margaret St. W., July 6th, '85.

Philadelphia, Pa., August 25th, 1885.

MESSRS. JOHN WYETH & BROTHER,

Dear Sirs:—

Thanking you for the promptness in supplying and care in producing the Tabloids of Cocaine, as recommended by Dr. Watson, in the "*Lancel*" of July 4th, I depended on this remedy to meet the annual Hay Fever trouble, which, in my experience, has always been very severe, and much intensified by accompanying asthmatic spasms. My old enemy came on, with all its virulence, on the 18th inst., but on the 19th, I was prepared with the tabloids. The use of them, in the simple manner, described below, produced marvelous relief in a few minutes. The quieting influence remained all day. Each day since, I have allowed the attack to come on, and then the renewed application has given the same satisfactory results, without the slightest unpleasant sensation. My experience fully confirms all that Dr. Watson states in favor of this new remedy. My mode of application is by inserting a tabloid in each nostril, against the inner bridge wall, retaining in position with a little cotton, and then pressing the nostrils together for five minutes. In half an hour, I remove the cotton.

I have, also, found the *asthmatic spasms wonderfully kept in check*, and this is not surprising, as, no doubt, the powerful dose of cocaine extends to some extent, its soothing influence, to the whole mucous membrane, and I think it probable some mode of using cocaine may be discovered, by which "pure" spasmodic asthma may be more successfully treated than hitherto.

I am, yours truly,

J. HARPER MORRIS.

1417 WALNUT STREET,

Philadelphia, Pa., August 27th, 1885.

MESSRS. JOHN WYETH & BROTHER,

Dear Sirs:—

The "TABLOIDS" of Hydrochlorate of Cocaine, so kindly handed to me some time ago, have proved a great success. The cases of Hay Fever applying to me for treatment earlier in the season, were treated with the Cocaine in solution, applied upon Absorbent Cotton to the nasal chambers, throat, etc., and later in the form of a spray, owing to the reduction in price of the article. Since the advent of the "TABLOIDS," I find them much more available and convenient. The prompt and great amelioration of the *Nasal Distress* renders the use of Cocaine most satisfactory. It undoubtedly stands in the first rank of remedies for Hay Fever.

I now find cauterization seldom necessary.

Thanking you for the favor of trying these tabloids, believe me,

Most sincerely yours,

ALEXANDER W. MACCOY, M. D.

Philadelphia, Pa., August 27th, 1885.

MESSRS. JOHN WYETH & BROTHER, Philadelphia.

Gentlemen:—

In compliance with your request of the 23d inst., I have tried your Cocaine Tablets in a number of cases of Hay Fever. Although I have had but a very short time to try them, I feel confident that they are a very valuable addition to our list of remedies, and without a doubt, are now the most effective palliative we possess. I cannot say that they have been successful in every case of the seven in which they were used; but in two, the symptoms could be kept in abeyance; in three, they decreased the intensity of the paroxysm, markedly, while in the two others, they did not seem to produce any effect. In the early stages of an access, they are capable of arresting the bronchial symptoms, as well as the nasal, but in confirmed asthma, palliation, only, was observed. Five pellets dissolved in a tablespoonful of water, have furnished valuable assistance in reducing the itching at the eyes.

At some future time, I shall be able to furnish you more satisfactory data, as I shall then have tried the tablets in a larger number of cases.

Yours, very truly,

CHARLES E. SAJOUS, M. D.