

COLLINS (J.)

A Consideration of the Paræsthetic Neurosis.

BY

JOSEPH COLLINS, M. D.,

NEW YORK,

INSTRUCTOR OF NERVOUS DISEASES IN THE NEW YORK POST-GRADUATE
MEDICAL SCHOOL; NEUROLOGIST TO THE DEMILT DISPENSARY;
PHYSICIAN TO THE HOSPITAL FOR NERVOUS DISEASES.

*Reprinted from the Boston Medical and Surgical Journal
of September 14, 1893.*

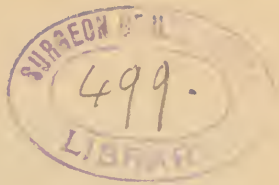
499.

BOSTON :

DAMRELL & UPHAM, PUBLISHERS,

No. 283 WASHINGTON STREET.

1893.



A CONSIDERATION OF THE PARÆSTHETIC NEUROSIS.¹

BY JOSEPH COLLINS, M.D., NEW YORK,

Instructor of Nervous Diseases in the New York Post-Graduate Medical School; Neurologist to the Demilt Dispensary, etc.

SOME two years ago, while attending the meeting of the Southwest German Neurological Society at Baden-Baden, my attention was attracted to a paper read by Dr. Leopold Laquer, entitled, "A Special Form of Paræsthesia of the Extremities." I remembered that we had seen a number of such cases in the clinic at the Post-Graduate School, and determined on my return to make a study of them with a view to their classification.

The paper which I present to you this evening is based on an analysis of forty-three cases in which the symptom-complex, hereafter described, was the only evidence of illness. I have endeavored to exclude from these statistics other cases of acro-neuroses, which, while they present some of the symptoms of the following cases, have other individual symptoms more pronounced, such, for instance, as ignipedites, waking palsy, and the like. Before entering into a discussion of the details of the form of paræsthesia to which I wish to call your attention, I should like in the first place to give the clinical history of a single case that shows a typical picture of this most distressing disorder.

Mrs. L., thirty-nine years old, is married and does house-work, including needle-work, washing and scrub-

¹ Read before the New York Neurological Society, June 6, 1893.

bing. She was born in Germany, and has a good family history. The patient is a stout, strong, well-nourished-looking woman, and gives the following history: About five years ago she began to complain of "pins and needles" sensations in both hands, the right worse than the left. This continued, off and on, for two years. She was then taken with a severe flooding, and since that time the sensations have been very much more troublesome. As a rule, they come on in the following way: She may go to bed quite well, with an entire absence of any sensations in the hands, and about four o'clock next morning she is awakened with a dumb, sleeping sensation, as if electricity was passing through them, or, as she expresses it, "as if her hands had gone to sleep, only a hundred times worse." These sensations persist after she arises; and rubbing, using, moving or chafing the hands, as is often done to restore the circulation, gives no relief. The symptoms are somewhat ameliorated when she gets up and stands or walks about with the hands hanging by the sides. During the day, when she works about the house, the paræsthesiæ are not present; but when she stops and takes up sewing or sits quietly or lies down, and particularly on the following night, the sensations are very severe. In this patient the paræsthesiæ never occur in the feet. There are no objective symptoms. Her general health is good, appetite normal, bowels constipated, menstruation regular but excessive; she has headaches occasionally, and gets tired much more easily than formerly.

It will be seen that the clinical picture, in brief, is as follows: The sufferers from this affection are in fairly good health; that is, were it not for the paræsthesiæ, they would not have occasion to consult a physician. The paræsthesiæ which they complain of are

made up of gnawing, boring, "pins and needles" sensations in the extremities, particularly the upper, and involving the fingers, hands and forearms, often of both sides, but not infrequently of only one. These sensations are not limited to the distribution of any one particular nerve in the extremity, but spread over entire segments of a member, such as a hand or forearm, with equal intensity. There is rarely any pain in the sense in which that word is ordinarily used. Using the word pain as the antithesis of pleasure, this paræsthesia furnishes a form of exquisite pain. While the paræsthesiæ lasts and in the interim between attacks, which is always a variable period, there are no fairly constant objective phenomena. Occasionally, the circulation of the extremities is evidently somewhat sluggish. There is absolutely no tenderness on pressure over any of the nerves of the part, and no perceptible changes of a trophic, motional or degenerative nature. The affection shows itself intermittently in paroxysms, and the period of the twenty-four hours when an attack is most likely to show itself is from four to six in the morning. The perverted sensations at this time become so severe as to awaken the patients and put an end to farther rest. Another favorite time is a corresponding hour in the afternoon. As a rule, however, the attacks in the day-time have a very close relationship to the work that the patient has been doing. In one subject to this form of paræsthesia an attack can almost always be precipitated by doing sewing or any other needle-work and by washing or scrubbing. There is no loss of sensibility to any form of sensorial irritation, nor is there loss of muscular strength on testing with the dynamometer. The patients complain, however, that the strength of their arms is more easily exhausted than formerly, and they cannot so easily sustain effort. In some cases the pa-

tients will describe other subjective sensations; but, in the main, they are as I have given them.

In studying the etiology of this affection, I find that the average age of the patients is just above thirty-nine years. Of the 43 cases on which this paper is based, 35 were women, eight were men. The age ranged from twenty-three to fifty-nine. Of the 43 cases, 26 were in the decade between thirty-five and forty-five years. Of the 35 women in the series, seven had suffered at some not very remote period either from metorrhagia or flooding.²

I want to emphasize this point somewhat, as it seems to have an indirect bearing in the etiology. Of the 43 cases, six had suffered previously from rheumatic or gouty pains, and of these three were males. In eight of the cases there was evidence of more or less anæmia. The most striking factor in the etiology, however, is the occupation. Of the 34 females, about 55 per cent. did either washing or scrubbing, crocheting or needle-work of some kind. Of the males, one was a waiter and dish-washer in a restaurant, another was a carpet-stretcher. Of the females, five were nursing children, two were pregnant. The time of the year in which the paræsthesiæ were most troublesome does not seem to be pertinent, and changes in the weather have no effect except that these patients naturally become, after a time, anything but cheerful, and inclement weather adds to their gloom. Neither

² Of 183 cases selected from the literature, including our own cases, the following etiological bearings are seen:

Number of females	151,	males	32.	Average age	40.7 years.		
Number of cases between	15 and	25	19
"	"	"	25	"	35	.	43
"	"	"	35	"	45	.	58
"	"	"	45	"	55	.	37
"	"	"	55	"	65	.	23
			Over	65	.	.	2

Of the 151 females in which the occupation was noted, 39 did scrubbing and washing, 48 did needle-work, and 23 did house-work. In two cases only was direct heredity seen to be manifest.

heredity nor neuroses, such as hysteria, neurasthenia, etc., can be associated with this form of paræsthesia. Schultze has recently stated³ that the sudden exposure from heat to cold has a causative influence, but I have been unable to find it in my cases, nor have I been able to induce the paræsthesia artificially in this manner, as will be spoken of later. Regarding disturbances of digestion being at the bottom of the trouble, as has been positively stated by Saunby, I must say that the digestive functions were carefully studied in many of the more recent cases of this series, and rarely was any particular disturbance of it found. When alcohol is apparently a causative factor of the paræsthesia, it should, I believe, be classified under the toxic variety. What relation this form of paræsthesia bears to autotoxæmia and the lithæmic constitution is not so easily disposed of. Unquestionably, there exists in the minds of many physicians who have observed this neurosis some illy-defined ideas as to the relationship of lithæmia and this form of paræsthesia; but I gravely doubt if there be any closer relationship between it and the lithæmic diathesis, than there is between lithæmia and the development of neurasthenia or some of the vaso-motor neuroses. Lithæmia in itself is the result of deficient oxidation of proteid matters in the blood; and as the manifestations of this form of paræsthesia is through the peripheral blood-vessels it is extremely plausible that the paræsthesia is not the result of the lithæmia but one of the factors on which the lithæmia itself is dependent. We are forced to this conclusion by the results of medication directed to the lithæmic state alone, which is very unsatisfactory. The other hæmatotoxic conditions of gout and rheumatism do not seem to have any causative relationship. Bodily fatigue, over-exertion, poor

³ Deutsche Zeitsch. f. Nervenh., 3d Vol.

nourishment and ventilation, lactation, and in fact anything that lowers the vigor and health of the body, are powerful predisposing factors. The hands are the parts affected most frequently. In 43 cases both hands were affected alone in more than 50 per cent. of the cases; all four extremities in nine cases, and one extremity in ten cases. When the paræsthesiæ came in one extremity at a time, I do not mean to say that this one part was solely the one affected. The following case illustrates how the sensations would leave one hand and go to the other.

Mrs. A., forty-one years old, American, married, and does house-work. Personal and family history good. She has never had a severe sickness except uterine inflammation and metrorrhagia after a miscarriage. For the past four years she has been troubled with boring, heavy, "pins and needles" sensations in the hands, and less in the forearms. She never had the sensation in both hands at the same time, but frequently when it passes away from one hand it appears in the other. She noticed this trouble for the first time shortly after the miscarriage already mentioned. These tingling and dumb, sleeping sensations in her hand awaken her early in the morning, and rubbing, squeezing and using her hands does not seem to dissipate the sensations. The greatest relief is obtained by wrapping her hands in flannel and applying dry heat. The paræsthesiæ are slightly more troublesome in wet weather; it never affects the lower extremities. If she washes to-day the painful sensations to-morrow would be almost unbearable. She suffers considerably from headache. Before concluding what I have to say about the etiology of this form of paræsthesia, I wish to refer again to the possibility that metrorrhagia has more than a casual relationship in precipitating this affection and in helping to keep it up after it occurs. Of the 34

women in this series of cases no fewer than 12 gave a history of flooding at some time, before or during the tenancy of the paræsthesiæ. I do not wish to be quoted as saying that flooding is the cause of this paræsthesia, but that it sometimes appears to be an etiological factor. The menopause I do not find to stand in close relationship, although the preponderance of cases is between thirty-five and forty-five years. These patients are not necessarily at the change of life, and as a matter of fact most of them are not.

One of the most aggravating cases that we have had to treat at the clinic was that of a lady sixty years old who gave a typical history corresponding to the one above, except that the paræsthesiæ affected all the extremities. This patient, notwithstanding her age, was menstruating regularly. Two cases (women) gave a history of excessive sexual intercourse, but with "withdrawal" on the part of their husbands. This had been practised for some years to avoid conception. It is admitted by gynæcologists that indulgence in this practice is followed by a condition resembling sub-involution and metrorrhagia as a natural sequence.

Taking these etiological factors into consideration, one is led to the question as to what the probable seat of the trouble may be. Nearly every one who has written on paræsthesiæ has had something to say on this point, in which he differed from others. It seems to me that we can exclude any trouble in the central nervous system and spinal cord. It is scarcely necessary for me to enter into details for the basis of this statement.

I am of the opinion that this form of paræsthesiæ is due to defective innervation in the blood-vessels which causes a low degree of blood-pressure and lack of proper blood-supply to the terminal branches of the

peripheral sensorial nerves. That is, the vascular changes may be secondary to central exhaustion. The perception of paræsthesiæ is, of course, a central process. It is probable that frequently in the beginning this paræsthesia is set up in a predisposed neurotic subject, and as a result of the combined influence of central cortical over-stimulation (from the reception of the peripheral impressions) and the suffering of the patient, acts upon ganglionic cells in certain areas of the cortex and produces exhaustion. This may be called a functional exhaustion similar to that produced and observed by Hodge. The causative factors of this form of paræsthesia are extremely chronic and remedial measures when not associated with rest are rarely beneficial. While rest, mental and bodily, is frequently followed by great relief, I am therefore inclined to agree with Laquer that it may be an exhaustion neurosis.

On a few of these patients I instituted some experiments for the purpose of corroborating the opinion that vascular changes may start anew the paræsthesiæ. If the patient whose history I have detailed at the beginning of this paper was made to hold both hands above the head, the paræsthesiæ would set in with such intolerable severity after four minutes that she could not keep them in this position. If one hand was held above the head and the other by the side, the paræsthesiæ would come on in the uplifted hand while the other hand would remain free. Putnam has noticed a similar condition in some of his patients. After the hands had been elevated for a few minutes and the paræsthesiæ had appeared and they were then allowed to hang down they could be seen to become dusky in color and swollen-like, showing that there was more or less vascular congestion following a transient anæmia.

Another patient who had paræsthesiæ in the hands

alone, had her hands dipped in water of the ordinary temperature, and allowed to remain there for from five to ten minutes, with no resulting paræsthesiæ. But if the hands were first dipped in very hot water and then in iced water the tingling sensations would come on after a few minutes. If the order was reversed, that is putting one hand in the cold water first and the hot water afterwards, the paræsthesiæ did not seem to occur.

Another patient, a male, shoemaker, who suffered from paræsthesiæ in all four extremities, was experimented on with Fleming's Tincture of Aconite, a drug which in small doses is known to lower blood-pressure and produce a lessened amount of blood, particularly to the periphery of the body with a high degree of certainty. One drop of this tincture was given every fifteen minutes to this patient when he was free from the paræsthesiæ, and almost invariably every time he was subjected to this treatment, by the time he had received the fourth dose the paræsthesiæ would occur.

It was not, I believe, the tingling which is caused by the absorption of a considerable amount of aconite into the system for two reasons: first, the tingling that results from large doses of aconite occurs in all parts of the body in the order of their sensitiveness as determined by Weber; and secondly, because in the same patient, *veratrum viride*, a drug which does not produce tingling, was followed in its administration by similar results to those obtained by aconite. Such experiments are in no way conclusive, but they are suggestive as to the probable conditions antecedent to the development of the paræsthesiæ. The fact that the hour out of the twenty-four when these sensations come on with considerable certainty is in the early morning, a time when the ebb of life is at its lowest tide and the blood-pressure registering nearest the base line, is an-

other bit of evidence in favor of the idea that the essential preceding condition in the development of the paræsthesiæ is a vascular one. That it occurs when the patient lies down as, for instance, in the day-time, and after use of the parts, as in working, scrubbing or needle-work, etc., is not inconsistent with this line of thought.

I cannot agree with some writers on the subject who say "we shall not have to look far for a solution of this difficulty. It is evident that we have faulty or imperfect actions in some of the more important tissues or structures of the economy, such as degenerative changes in the vessels, etc." From a rather careful study of the vascular system in these patients with the aid of the sphygmograph I must say that it is but rarely that I have found any indications of arterial degeneration.

Before saying a word in regard to the treatment which has been found most successful with these patients I would like to suggest a classification of the paræsthetic neurosis, and illustrate each of the divisions by citing a typical case. Of course, it will be understood that I rigidly exclude the neuralgias, neuritis, ignipedites, etc. The following classification is principally on an etiological basis:

- (1) Emotional.
- (2) Mental.
- (3) Neurasthenic.
- (4) Toxic.
- (5) Waking numbness.
- (6) The one under consideration which may be called an occupation paræsthesiæ, so often is it associated with a certain class of occupations.

As an example of the first form, I cannot do better than to present the notes of a case reported by Dr. Dana. A gentleman forty years old, a cotton-broker,

suffered from almost constant sensations of numbness, prickling, etc., of the left arm and hand, extending up to the elbow. The symptoms annoyed him to the last degree. There was no anæsthesia or objective changes in the hand, and the patient was in good general health. He was an excessive smoker, but interdicting this and subjecting him to various forms of treatment was followed by no benefit. Finally, after some months cotton went up and the affection gradually left him.

As a type of the paræsthesiæ depending upon a disordered mental state the following case of galeanthropy or *Katzensucht*, as it is termed by the Germans, may be related. A young woman twenty-seven years old, who had inherited marked neurotic taint, her mother having died of cerebral softening at forty years old, one aunt of insanity at thirty-three years old, and one great-aunt had epilepsy. The patient herself was always very nervous when a child. For a considerable time she had complained of inability to sleep well, and in the morning of most distressing sensations; tingling, numb, pinching sensations in the hands and forearms, particularly the right, and in the feet worse than in the hands. These sensations persisted most of the day, but disappeared toward evening. In addition to the paræsthesiæ of the extremities she says there is an area about as large as the hand above her right buttock where the sensations also appear. After suffering from these paræsthesiæ for some time she had a transient attack of the mania known as galeanthropy. The attack came on in the following way: After some very trying domestic infelicities she was left alone one day, and was sitting brewing her troubles, when she noticed that a picture of the "Father of his Country," hanging on the wall on the opposite side of the room, suddenly began to misbehave in a most re-

markable manner. Then all the other pictures on the walls followed this illustrious example. This kept up for some time; and then she thought she was being transformed into a cat; and after that she acted like a cat, walked on all fours, spit and scratched when any one came near her, would not let them undress her or put her to bed, would eat only off the floor, tried to scramble up the bed-post and sides of the room like a cat, etc. She imagined she was consorting with other felines, and, in fact, gave quite a typical history of this form of alienation. After quite a protracted treatment this patient recovered from her mental affection, though she still has the paræsthesiæ occasionally.

The neurasthenic form is really quite common, and it is unnecessary to quote a very elaborate history. The following case seen in private practice may be taken as an example:

X., a married lady of forty-four years, was bred a lady of leisure, but circumstances at present compel her to manœuvre with a small amount of money invested in a business in order to make a living. As a result, she has developed quite a typical neurasthenic condition of the cerebral type. She has head-pressure and sensations, morbid fears and dread, loss of strength and ambition, and, added to this, paræsthesiæ of the hands and feet, which are extremely distressing. When the neurasthenic symptoms have their good days, the paræsthesiæ are forgotten, and the reverse.

The toxic forms of paræsthesiæ, of which we see so many examples, are, I believe, mostly the indications of beginning multiple neuritis. Frequently, however, they do not go to extensive changes in the nerves and muscles, and we see the manifestations of toxicity only in the paræsthesiæ. Many writers have spoken of this form of paræsthesiæ, and it is not infrequently associated with malarial poisoning, moderate alcoholism,

and the ingestion of other poisons. In the following case it resulted from excessive tea-drinking :

C. B., female, fifty years old, native of England, married. Has had nine children. Has always drunk a glass or two of beer a day, but drinks mostly tea, which is taken strong and often. She thinks seven or eight cups a day would be a low average. She says she keeps the tea on all the time, and frequently takes it in place of food. She reached the menopause about three years ago. For upwards of two years she has complained of burning, gnawing, prickling sensations in the feet and legs. Sometimes these sensations are really very painful. More recently she has felt similar sensations in the arms from the elbows down, and in the face. All around her mouth she gets prickling "pins and needles" sensations; and her face gets a sort of numb, wooden feeling in it, so that she has to put up her hand to feel if her face is really there. The appetite is fairly good, bowels constipated, and she suffers considerably from frontal headache and gets low-spirited often. This patient, when tea and beer were entirely forbidden her, and she was put upon a nutritious diet with nuxvomica and out-door exercise, improved steadily, so that now she is practically well.

Several other cases could be cited where the paræsthesiæ have disappeared after a prolonged treatment with anti-malarials.

Under the title of "Waking Numbness," Dr. A. H. Smith has described four cases of a condition which would seem to be a form of paræsthesiæ, to which is added more or less complete temporary abolition of motility. In a case presenting himself at the clinic, a barber thirty years old, of strong neuropathic predisposition, complained that when arising in the morning his hands were powerless, feeling as if he "had

bowled tenpins too long the night before and had no strength in them," and with this, tingling, numb sensations. He had been in the habit of taking a nap during the slack hours in the afternoon, but he was obliged to forego indulging himself in this direction, as the numb feelings were sure to come on after awakening. This man improved under the use of galvanism, tonics, invigorating baths and out-door exercise, but he was lost sight of before he was completely well.

Then there are the paræsthesiæ that come with rheumatism, gout, arthritis, etc.; but they should be included under the division of toxic paræsthesiæ. We have had many good examples of the paræsthesiæ resulting from a combination of rheumatism, bad nutrition and depravity. One young lady, a dancer in a well-known ballet extravaganza, complained of a condition very much resembling the history just detailed. She had less periodical and more continual impairment of strength than did the last patient. She was very anæmic, run down, badly nourished, kept late hours, used enormous amounts of cosmetics containing lead, and had previously suffered from rheumatism. Her improvement was very slow, on account of the fact that necessity compelled her to keep on with her occupation and the harmful prerequisites which were incident to her business.

These illustrative cases of paræsthesiæ have been detailed for the purpose of showing that the paræsthetic neurosis presents itself under several different forms; and, with some license, they can be grouped as I have indicated. Recently, Schultze, of Bonn, has published an article dealing with the form of paræsthesiæ that I have considered in the first part of this paper. He has given to it the title of "Acro-paræsthesiæ." If I am right in my contention for the above

classification, this term is not sufficiently definite to warrant admitting it to our nomenclature. Acro-paræsthesiæ simply means paræsthesiæ of the extremities. You will admit that the forms of paræsthesiæ that I have mentioned are of real occurrence, and could probably duplicate the cases I have detailed by a large number of cases.

Regarding the therapeutics of this special form of paræsthesiæ I can only admit and concur in what all previous writers have stated, namely, that we have no specific remedy. In my experience, prolonged rest has been the most important beneficial agent, particularly when restorative treatment is added.

I consider the administration of neurotics and depressants, such as antipyrin, phenacetin and the like, positively harmful. I have not found it necessary to treat specially and individually the digestive tract, for, as has before been stated, it is not customary to find it seriously at fault. Too much emphasis cannot be laid upon the point that everything which tends to exhaust these patients or in any way interfere with their vitality should be controverted. The use of the faradic current, in the shape of the faradic local bath, as recommended by Laquer, seemed to be very beneficial in two cases that have been under continuous treatment during the past winter. In fact, I may say that one of these patients has apparently recovered under this treatment after she had acted upon the advice to wean her baby, which she had been nursing for a long time. The galvanic current has not given anything more than temporary relief. So far as treatment has been given with directness to combat any lithæmic diseases that have been supposed to exist, I must say candidly that I have seen no startling results. Some of these patients have been on spring water and mineral acids without any beneficial results.

The plan of treatment which is most beneficial is regulation of the diet (particularly by limitation of the nitrogenous food-stuffs), quiet out-door life, change of occupations and habits, and the administration of restoratives.

A list of the literature bearing on this subject is herewith appended :

- Aulde. Medical Bulletin, p. 292, 1887.
 Berger. Brezlauer Artzl. Zeitsch., Nos. 7 and 8, 1879.
 Bernhardt. Neurolog. Centrallb., July 1, 1890.
 Chapman. Medical Times and Gazette, 1863.
 Cohen. Arch. General de Med., October, 1863, etc.
 Dana. New York Medical Record, p. 57, 1885.
 Dodge. Medical News, July 30, 1887.
 Haig. London Lancet, September 26, 1885.
 Hodge. American Journal of Comparative Medicine, 1891.
 Hanfield-Jones. Studies in Functional Nervous Dis., London.
 Laquer. Neurolog. Centrallb., p. 188, 1893.
 Mitchell. Lecture on Diseases of the Nervous System, Philadelphia, 1885.
 Nothnagel. Deutsch. Archiv. f. klin. Med., ii, p. 173, 1886-7.
 Ormerod. St. Bartholomew Hospital Reports, 1883.
 Piotrowski. Przegląd lekarski Krakow, No. 35.
 Putnam. Archives Med., p. 147, 1880.
 Rosenbach. Centrallb. f. Nervenheilk. u. Psych., xiii, 1890.
 Saunby. London Lancet, September 5, 1885.
 Sinkler. Medical Times, p. 841, 1884.
 Smith. American Journal of Medical Sciences, p. 411, 1887.
 Southey. St. Bartholomew Hospital Reports, vol. xvi, p. 16.
 Squire. London Lancet, December 4, 1886.
 Schultze. Deutsch. Zeitsch. f. Nervenheilk., vol. iii, 1893.

THE BOSTON
MEDICAL AND SURGICAL JOURNAL.

A FIRST-CLASS WEEKLY MEDICAL NEWSPAPER. PUBLISHED EVERY THURSDAY.

Two Volumes yearly, beginning with the first Nos. in January and July. But Subscriptions may begin at any time.

This JOURNAL has been published for more than sixty years as a weekly journal under its present title. Still it is incumbent upon this JOURNAL, no less than upon others to assure its patrons from time to time, as the occasion arises, of its desire, ability, and determination to meet all the requirements of the most active medical journalism of the day, without sacrificing any of that enviable reputation which is an inheritance from the past.

It is under the editorial Management of Dr. George B. Shattuck, assisted by a large staff of competent coadjutors.

Communications from all quarters of the country are acceptable. Liberal arrangements are made for reprints of original articles, and for such illustrations as serve to increase their value or interest.

All editorial communications, and books for review, should be addressed to the Editor.

Subscriptions and advertisements received by the undersigned, to whom remittances should be sent by money-order, draft, or registered letter.

Terms of Subscription: In the United States, and to Canada and Mexico, \$5.00 a year in advance. To Foreign Countries embraced in the Universal Postal Union, \$1.56 a year additional. Single numbers, 15c. Ten consecutive numbers free by mail on receipt of \$1.00.

Sample copies sent free on application.

PUBLISHED BY DAMRELL & UPHAM,
283 Washington St., Boston.

