

23. *Surgical treatments for deflected toes* undoubtedly give most satisfactory results in many long-standing cases of severe grade; but it is necessary to sound a note of warning also that a very large number of hallux valgus patients can be equally improved by non-operative methods. As our knowledge of the great possibilities and limitations of surgery has increased, there have been wonderful advances in this special branch of medicine; and very few bad results are observed now after surgical treatments for deflected great toes. This fact, nevertheless, should not be allowed to obscure the comparative merits of other forms of treatment.

While it may be perfectly safe to operate on toe deformities, and almost surely relieve patients to some degree finally, yet the simple expedient of wearing proper shoes with corrective pads and cuffs will relieve the majority of mild cases without surgically damaging the ligaments of transverse arches of feet, and without disabling patients as operations do. Not toe deformities alone, nor possibilities for safe surgery only have to be considered; but functional foot defects which are represented have to be judged mainly, if the highest aim of medical practice, namely, the welfare of patients, is adhered to most strictly.

#### DISPENSARIES IN MASSACHUSETTS, PARTICULARLY IN BOSTON.

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THE Social Insurance Commission of Massachusetts, appointed in 1917, was interested to ascertain the extent to which dispensary service has grown in Boston, and elsewhere in the Commonwealth; the proportion of the population which dispensaries are reaching; the social and economic classes reached; and the kinds of medical service which are provided. The data in this paper were collected at the request of the Commission, and much of the text will appear as an Appendix to its Report.

Dispensaries and out-patient departments of hospitals are generally philanthropic institutions. They usually charge small fees, for instance, twenty-five cents or ten cents per visit, and similar amounts for medicines, etc. These fees are generally remitted in whole or in part when the circumstances of the patient appear to render it necessary.

With the assistance of the State Board of

Charity, to which all incorporated charitable institutions must report annually, a list of dispensaries and out-patient departments was secured, and the general statistics of their work ascertained. Table I shows a list of 22 dispensaries and out-patient departments, in Boston, and the total attendance, or number of "visits" made by patients to the clinic, also the number of new patients received during the most recent year for which statistics are available. This was usually 1916. The data are not complete, practically all of the tuberculosis dispensaries being omitted. Several small dispensaries are also not included. This renders the figures below rather than above the truth. Since this paper has reference primarily to general medical care, the omission of tuberculosis clinics would not affect conclusions based on these data.

It will be observed that the total annual attendance at these dispensaries was nearly 900,000, and that the number of new patients was over 250,000. To ascertain the number of different individuals we must bear in mind that there are a certain number of persons who are treated at more than one dispensary. Investigations published in *The Modern Hospital* of 1916 (Vol. vii, p. 359) indicate that this overlapping is small, not over 10%, and probably not over 5%. On the other hand, the number of "new patients" at the dispensaries during a year does not equal the number of different individuals during the same period, since many old patients who were treated during a previous year, keep on coming. A total attendance of 895,000 probably represents at least 300,000 different persons. Deducting 10% for overlapping, we have 270,000. Not all of these are from the city of Boston, but the great majority are. Certain of the dispensaries receive patients from Boston only; some, like the Massachusetts General Hospital and the Children's Hospital, receive a considerable proportion from outside the city. Only a few of the annual reports of the institutions state the proportions exactly, but it is very probable that fully three-quarters of the attendance is from within the city limits. Three-quarters of 270,000 is 202,500. It is safe to say that 200,000 residents of Boston receive treatment annually at the dispensaries of the city. This is one-quarter of the total population.

It must not be inferred that this vast number of persons received all of their medical service through these dispensaries. Many of them re-

ceive part of their medical service from a private physician, and come to the dispensaries for special service only. The three departments which correspond more or less to the field covered by the general practitioner are the medical (adult and children's), and the general surgical. At the Out-Patient Department of the Boston City Hospital, 68% of the new patients come to these three clinics, and 32% come to clinics dealing with specialties. At the Massachusetts General Hospital Out-Patient Department, 58½% of the new patients come to the three general clinics, and 41½% to the specialties. At the Boston Dispensary the proportion is reversed, 39% coming to the general and 61% to the special clinics. The average for these three largest institutions is 55% of new patients in the three general clinics, and 45% in the specialties. But a considerable proportion of patients (certainly over 10%, and probably 25%) in the medical, children's and surgical clinics, come to see a specialist. We may say with assurance that more than half of all the patients at dispensaries come to secure service such as requires a specialist rather than a general medical practitioner. In view of the high cost of specialist service at private office rates, this proportion is significant.

There are, in fact, large numbers of families who can and do employ a general practitioner for ordinary ailments, but who cannot afford to pay for the work of an oculist, or a throat specialist or a specialist in the diseases of children, etc. Also, it is a matter of common knowledge to all hospital administrators, that a certain proportion of dispensary patients are referred by doctors, mostly general practitioners, who wish their patients to have specialist service, for which the patient cannot pay.

All the dispensaries on the list aim to reject patients who can afford to pay a private physician for the care they need. The accurate enforcement of this policy is not always easy, for obvious reasons. Investigations have indicated, however, that the proportion of applicants for treatment at the Boston Dispensary and the Out-Patient Department of the Massachusetts General Hospital, who could pay for the medical service which they need, is very small, less than 3%. (See Annual Report, Boston Dispensary, 1915, p. 46.)

From what social classes does this army of 200,000 patients come? The great bulk are wage-earners or their dependents. The family

incomes have been tabulated for 1196 families, taken consecutively from the patients in the Boston Dispensary during September, 1917, and 191 families from the Out-Patient Department of the Massachusetts General Hospital, taken during November.\* Statistics of income have also been prepared for 1457 individual wage-earners, at the Boston Dispensary, taken during August, 1917. The family incomes, of course, include supplementary earnings of adults or children other than the chief wage-earner. The Massachusetts General Hospital figures agree quite closely with those from the Boston Dispensary, although the number of cases from the Massachusetts General Hospital is rather small on which to base any conclusions.

Taking all these data together, we find that about 40% of the families of these dispensary patients are earning less than \$15 a week; about 45% earn between \$15 and \$20, and 20% to 15% over \$20 a week. In other words, a little less than half of these families have an income of \$800 or less a year, and about the same number have incomes between \$800 and \$1000 a year.†

A highly significant figure is the number of cases known to be receiving material aid, *i.e.*, money, food, clothing, fuel, etc., at the time when they were dispensary patients. The proportion of families thus aided by charity was less than 3% among 1196 Boston Dispensary families.‡ It is safe to say that not over 5% of the patients at the dispensaries are usually in receipt of material aid from charitable agencies. In other words, the great bulk of the families whose members are cared for by the dispensaries of Boston are able to meet the ordinary expenses of maintaining a family during health, but they cannot meet the expenses of illness and pay the cost of medical service in addition.

Among the same group of patients of the Massachusetts General Hospital and the Boston Dispensary, it appears that a majority of fam-

\* Detailed tables are printed in the Appendix to the Report of the Social Insurance Commission, giving the figures on which these and the following statements are based.

† These estimates of income, based on usual weekly earnings, are probably conservative, as most working people have periods of unemployment which, even during the present prosperous times, would amount to something through the year. The figures, moreover, correspond quite closely to the general levels of wage-earners' incomes, which the reports of our State Bureau of Statistics show to prevail in this community.

‡ Reference is made later to a special intensive study of a number of families, made by the Social Service Departments of the Massachusetts General Hospital, Boston City Hospital, Psychopathic Hospital, and Boston Dispensary, and including 159 cases. It was found that only 49 out of these 159 families, or less than 30%, were in receipt of material aid, although Social Service Department cases are those who present some family problem, or distress other than medical need.

ilies have three children or more; that the proportion of large families is not, however, unduly great; that, in fact, the size and constitution of families is not very different from that which would be found in the community as a whole.

Previous to the war-time régime of abnormally high prices, an income of \$800 a year, for a family of average size in Boston, was estimated by several careful students to be barely sufficient for the minimum physical necessities, and gave no margin for the emergency of illness. An income of \$1000 a year, for a family of five or six, gave only a very slight margin. Thus, even before the war, families receiving such incomes as these dispensary patients possess, could but just support themselves during health, but could not bear the burden of illness without either deprivation of food or other necessities, or else recourse to charity. At the present time, the above estimates are too low, for wages have, on the average, risen much less than the cost of living. The incomes of these dispensary patients are not lower than are shown by our State Bureau to prevail among many wage-earning groups. They can often pay for medical service in an emergency, but out of an income of \$1000 or \$1200 a year a family of five or six persons cannot meet the expense of specialist service, nor of any long-continued illness. When the illness is of the chief wage-earner the condition of the family usually becomes serious.

The question has been raised whether, under the present system, the patient frequently delays in getting medical treatment long after the onset of his disease. Data were secured on this point from 1529 patients at the Boston Dispensary and 197 at the Out-Patient Department of the Massachusetts General Hospital—a total of 1726. Out of the 1726, 1236 had had no medical care previous to coming to the clinic, and 435 of these, or 35%, had been suffering from their ailment for three months or more before seeking the clinic's care. One hundred and sixty-three additional cases, or 13% out of the same 1236, had delayed from one to three months. Out of the whole 1726 cases, 350 had waited from a week to a month, while 430 had gone to the clinic within a week from the time they felt their illness.

These figures can be better understood when delay in securing treatment is tabulated in connection with particular diseases. This has been

done for 1529 Boston Dispensary cases. Where diseases are such as cause much pain or discomfort in their early stages, such as minor surgical lesions, cuts, burns, etc., or irritations of the skin, treatment appears to be sought pretty promptly. On the other hand, with diseases that cause less trouble to the patient in the beginning, but which are often likely to be more serious, there is frequently more delay. Thus 15 out of 29 patients with tuberculosis were conscious of illness over three months before they sought any kind of treatment, and 7 waited a whole year; 15 out of 37 cases of syphilis waited more than three months, which is past the period when the disease can be most effectively dealt with; 40 out of 69 of disorders of the circulatory system (mostly heart diseases), and 10 out of 21 cases of kidney disease, waited over three months.

Of the minor diseases of the ear, nose, and throat, not requiring operation, 48 out of 75 cases waited less than one month, while out of 152 more serious cases, requiring surgical operation, only 43 cases came within a month, and 98 cases waited over three months. The same contrast appears in "general surgery," since the non-operative and usually minor cases appear to have waited less time before seeing a doctor than the operative cases, which are generally more serious.

The data collected also show the proportion of patients who had some medical care previous to coming to the clinics, and whether this care was secured from a private doctor or from another medical institution (usually a hospital). Three hundred thirty-nine cases (out of 1726) had previously been to a private doctor. The usual reason given for leaving him was that they "had no more money to pay him." A considerable number of cases are referred to the clinics by the doctors, for consultation or for care by a specialist for which the patient could not pay at private rates.

The fact that of these 1726 cases, only 339 had had a private doctor, whereas 435 persons had waited three months or more before getting any medical treatment, suggests that private medical practice is not sought by a large proportion of people because they feel they cannot afford it. It also indicates that there are many persons who either do not know of dispensaries, or who do not wish to accept medical charity. Under the best conditions, people will often delay in going to a doctor, even if a doctor is free. The

figures regarding delayed treatment must be interpreted with this caution in mind.

The Social Service Departments of the four institutions above mentioned rendered reports of 159 cases which had been individually studied. Among the points taken up was the extent of any form of insurance in these families. It was found that sickness insurance was infrequent. Only 23 out of 159 families carried any sickness insurance. One hundred and twenty-four stated that they had none; in 12 cases no data on this point were secured. *Life* insurance was fairly frequent, 60 families carrying some insurance on one or more members, 78 carrying none, and 20 furnishing no information on this matter. This "life insurance" is usually industrial insurance on the weekly-payment plan, providing small amounts on the death of the insured person. The majority of the 60 cases pay 50 cents a week or more for this insurance.

A comparison of the figures secured in this study may be made with the information gathered in California by the Social Insurance Commission of that State in 1916, and published in their Report during the early part of 1917: "Among 2587 patients applying at dispensary clinics in San Francisco, only 53 were dependent upon charity, public or private, for their support" (page 43 of Report). In addition, there were 137 cases of unemployment where dependency was imminent, making a total of 190 cases, or 7%, in which the "application for free treatment at the clinics in San Francisco could be attributed to the fact of dependency or unemployment" (page 44). In 42% of the 2587 San Francisco cases the family income was \$14 or under a week, which compares closely with the 36% found among the Boston Dispensary patients, and 43% among the Massachusetts General Hospital cases. The studies in Boston and San Francisco—the two extremes of the continent—are alike in showing that a large number of self-supporting wage-earners of small incomes, not otherwise dependent in any sense, are seeking medical assistance at dispensary clinics. The California Commission accounts for this situation as follows (page 46 of their Report):

"It would be futile to ascribe such seeking (of medical care at the clinics) to a total lack of self-respect and an endeavor to get something for nothing on the part of these individuals. The number of them alone would be sufficient to refute such a conclusion. Aside from this point,

however, the interviewing and observation of 1000 cases would convince any one that there is a more far-reaching and direct cause responsible. The growing attendance at the free clinics is accounted for by the fact that they can there get from physicians and surgeons, whom they know to be men and women of reputation, specialist care, which they cannot possibly afford to purchase. There is no reason to suppose that if there were a way by which they might buy this same attention for a small price within their means we should still find the bulk of them frequenting the 'free clinic.'"

In the city of Boston we found that a quarter of the population receive care at dispensary clinics annually. A marked contrast appears between Boston and the remainder of the Commonwealth. From data furnished by the State Board of Charity we find that in Massachusetts, outside of Boston, there are only 30 dispensaries and out-patient departments. The total number of visits paid by patients to these 30 dispensaries and out-patient departments was 138,000 for the last year during which reports were available (usually 1916). The list of institutions is given in Table II. The number of new patients reported was 32,000, and the probable total number of different individuals treated was between 50,000 and 60,000. Boston has one-fifth the population of the Commonwealth, but between three and four times as many dispensary patients as all the other cities and towns in the Commonwealth put together. This is true in spite of the fact that Boston has more physicians in proportion to its population than the rest of the State. The fact that most of the tuberculosis dispensaries are omitted from the lists would not substantially affect the contrast between Boston and the rest of the Commonwealth.

Do these facts mean that Boston is over-supplied with facilities for charitable medical care? Or does it mean that the remainder of the Commonwealth is under-supplied? The statistics gathered do not furnish an answer to this inquiry. There can be little doubt that many communities in Massachusetts contain large numbers of wage-earners whose incomes are no higher than those found among dispensary patients in Boston. The question may at least be raised whether no need exists, in such communities, for some system of organized medical care, particularly in the specialties, such as the dispensaries of the metropolis in a measure provide?

The organizations of dispensaries as found in Boston would, of necessity, have to be adapted to the conditions in smaller communities. In a large city specialists in all the different branches of medicine are usually found, but they are relatively much fewer in smaller places. The large dispensary, particularly if attached to an important hospital, provides medical advantages to the physicians on its staff, by affording facilities for diagnosis and consultation, which

be little doubt that any considerable expansion of dispensaries in the smaller communities must be based upon a system of remunerated medical services, and that such remuneration is necessary, both in justice to the medical profession and in order to have sufficient and efficient service in the clinics. One of the disadvantages of the present system in the dispensaries of Boston is the fact that almost all the clinics are held during working

TABLE I.

DISPENSARIES AND OUT-PATIENT DEPARTMENTS IN BOSTON.

NAME OF INSTITUTION	TOTAL VISITS	TOTAL NEW PATIENTS
Berkeley Infirmary .....	5,075	782
Boston City Hospital (including Relief Stations) .....	221,267	86,922
Boston Dispensary .....	118,918	24,505
Boston Lying-in Hospital .....	7,888	1,632
Carney Hospital .....	48,111	18,965
Children's Hospital .....	44,405	9,283
Denison House .....	4,848*	1,616
Dispensary for Women .....	10,111	1,093
Dorchester Relief Society .....	1,000†	300†
Forsyth Dental Infirmary .....	29,186	17,060
Jamaica Plain Dispensary .....	1,326*	442
Lincoln House Association .....	5,778*	1,926
Mass. Char. Eye and Ear Inf'm'y	76,017	30,698
Mass. General Hospital .....	201,375	31,061
Mass. Homeopathic Hospital ...	44,094	12,745
Maverick Dispensary .....	8,301	2,052
N. E. Hospital for Women and Children .....	6,012*	2,004
Peter Bent Brigham Hospital ..	36,523	8,536
St. Elizabeth's Hospital .....	8,713	2,936
Salvation Army (Rescue Home)	300*	100
Woman's Home Miss'y Society (Hull Street Dispensary) ..	16,643	5,548
<b>TOTAL</b> .....	<b>895,391</b>	<b>260,206</b>

NOTE.—These figures do not include some small dispensaries and also omit the City Tuberculosis Dispensary. The number of "new patients" is not the same as the number of *different individuals* treated.

\* In certain cases which are marked with an asterisk (\*) the reports of the institutions as furnished to the State Board of Charity did not contain the number of visits and in certain other instances they did not contain the number of new patients. Where either figure was given the other has been estimated according to the rule that the number of visits is usually not less than three times the number of new patients.

† Estimated.

a small dispensary cannot offer. Connection with a medical school is also of value to a physician, and is not possible except in a city which has one or more medical colleges. For all these reasons it would be much more difficult and often impossible to secure in small communities anything like the amount of volunteer medical service which is found in the dispensaries of Boston. It may, indeed, be questioned, whether the custom of depending upon volunteer medical service in dispensaries has not reached a point at which the system threatens to break down by its own weight. In any case, there can

TABLE II.

DISPENSARIES AND OUT-PATIENT DEPARTMENTS OF HOSPITALS OUTSIDE OF BOSTON.

NAME OF INSTITUTION	TOTAL VISITS	TOTAL NEW PATIENTS
Brockton Hospital Company, Brockton .....	1,660	690
Free Hosp. for Women, Brookline	8,124	1,920
Cambridge Hospital, Cambridge	8,484	1,420
Rufus S. Frost General Hospital, Chelsea .....	1,658	999
Clinton Hospital Association, Clinton .....	1,344	448
Framingham Hospital, Framingham .....	236	135
St. Anne's Hospital Corporation, Fall River .....	1,753	586
Union Hospital, Fall River ...	30,529	3,998
Addison Gilbert Hospital, Gloucester .....	250	272
Hale Hospital, Haverhill .....	177	59
Ladies' Union Charitable Soc. (Lawrence General Hosp.)	5,157	1,719
Lowell Corporation Hospital, Lowell .....	17,856	4,716
St. John's Hospital, Lowell...	5,645	1,766
Ludlow Hospital Soc., Ludlow..	2,142	487
Lynn Hospital, Lynn .....	13,691*	5,642*
Malden Hospital, Malden .....	816	272
Melrose Hospital, Melrose .....	601	299
Milford Hospital, Milford .....	219	198
Glover Home and Hospital, Needham .....	20	20
Anna Jacques Hospital, Newburyport .....	626	374
Cooley Dickinson Hospital, Northampton .....	383	99
Hillcrest Surgical, Pittsfield ...	5,296	883
Salem Hospital, Salem .....	6,100	1,527
Somerville Hospital, Somerville	17,568	608
Springfield Hospital, Springfield	1,386	462
Morton Hospital, Taunton .....	100	56
Waltham Hospital, Waltham ...	404	433
Noble Hospital, Westfield .....	36	12
Memorial Hospital, Worcester ..	11,385	3,578
<b>TOTAL</b> .....	<b>143,651</b>	<b>33,678</b>

NOTE.—The tuberculosis dispensaries are not included.

\* Same footnote as to Table I.

hours, so that wage-earners coming to the dispensaries lose time and money. So far as dispensary service is to be for the benefit of employed persons, it should include, in Boston and elsewhere in the Commonwealth, a reasonable proportion of clinics held in the late afternoon or evening.

## SUMMARY.

Twenty-three dispensaries in Boston treat 200,000 persons annually, or one-quarter of the population of the city. In all the remainder of the Commonwealth there are only about thirty dispensaries, receiving altogether only 50,000 to 60,000 patients a year. Facts gathered concerning certain groups of dispensary patients in Boston indicate that the bulk are from self-supporting families with incomes similar to those possessed by the majority of wage-earning families in general; and that these families, while able to meet their ordinary expenses, cannot provide for the emergency of sickness nor pay sufficient for the medical service which they require, to secure it at private physicians' rates. Delay in obtaining needed medical treatment after the onset of disease is frequent, especially in diseases which begin insidiously, even when they are serious. Protection to the wage-earner or his family by means of sickness insurance is infrequent. The present dispensary system, while providing greatly-needed treatment, both in general medicine and surgery and in the specialties, has the disadvantages of depending upon volunteer medical service, and of being usually inaccessible to wage-earners except during working hours.

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### ON THE POSSIBLE NATURE OF MEASLES.

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CONCERNING the nature of the disease agents which give rise to the acute exanthemata, Von Jürgensen<sup>1</sup> said: "Since the methods which serve for the demonstration of pathogenic microbes fail us here, we are justified in concluding that we have to deal with something of a different nature. We have no ground, however, for assuming that this different 'something' is not a living organism, since every argument favorable to a belief in a *contagium vivum* as the cause of infectious diseases in general applies in full force to the acute exanthemata."

Many years ago Jenner<sup>2</sup> asked the question in regard to measles, scarlet fever, etc.: "May we not conceive that many contagious diseases, now prevalent among us, may owe their present appearance not to a simple but to a compound origin?"

In presenting an hypothesis that scarlet fever and the other acute exanthemata may be due to varieties of bacterial anaphylaxis depending on various well-known micro-organisms, I suggested in a recent communication<sup>3</sup> that the acute exanthemata may depend on something more than mere primary infections with bacteria. I believe that the evidence points to a streptococcic anaphylaxis as the "compound" cause of scarlet fever.

Measles, also, may be nothing more than the manifestation of an anaphylactic intoxication following sensitization with a well-known micro-organism. In spite of the fact that measles is the most prevalent and widespread disease to which human flesh is heir, its cause has not been explained by finding or assuming any simple microbial agent. Either the causal agent is one which is unrecognizable by our present methods of examination and diagnosis—a rather hopeless outlook—or the cause is so simple in its explanation that we have overlooked it.

It may be said that measles is, primarily, an acute respiratory disease. That the organism *par excellence* of acute respiratory disease is the pneumococcus will be admitted by most authorities. Is the pneumococcus guilty of being the prime cause of measles? Examine the records of our Army camps. Is it not suggestive that measles and pneumonia seem to closely coincide in number of cases, seasonal prevalence, mode of spread, communicability, etc.?

An account given by Duncan<sup>4</sup> of a recent epidemic of measles and pneumonia at Camp Wheeler is most interesting in this connection. In point of time the measles curve and pneumonia curve almost coincide. There were 701 cases of pneumonia and 2939 cases of measles. Of the 701 cases of pneumonia, 312 (44.51%) were preceded by measles, while 389 (55.49%) were not preceded by measles. 10.6% of the 2939 measles cases developed pneumonia. Duncan says that "the two diseases occurred in different parts of the camp at about one and the same time, showing thereby that a common factor present at the same time in different parts of the camp had to be considered." The pneumococcus as the etiological agent in both diseases would explain many of the facts brought out.

From the standpoint of general factors such as annual, seasonal and monthly incidence curves, it may be said that measles and pneumonia correspond. Sporadic cases of each dis-