

SCIENCE:

A WEEKLY NEWSPAPER OF ALL THE ARTS AND SCIENCES

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THE FARMER AND TAXATION.¹

[Continued from p. 132.]

It has been proposed, indeed has been done in many States, to make every man swear to the truthfulness of the returns, and to provide adequate penalties for false returns. Experience shows, alas, that men will swear falsely by the whole-sale and really seem to think little of it. Nor would any American community favor the establishment and enforcement of penalties which would really accomplish anything in this direction. As long, therefore, as this system remains we may expect to see the farmer unjustly burdened, simply because, as conditions are, a larger portion of his wealth is in such a form that it cannot escape taxation.

The country districts are, however, at a disadvantage in another direction. Owing to their declining wealth and population they must either continually advance the tax rate or they must be content to see the public institutions of the community go slowly backward. The number of people in the country as compared with the city is, as we have seen, steadily decreasing, i.e., the cities are growing steadily larger, and embracing a continually increasing proportion of the population. This means, of course, either that the burdens for the support of schools and other public institutions will grow heavier and heavier, or that they shall not advance, or, indeed, shall retrograde. It is no uncommon sight to see the schools gradually deteriorating in the rural districts. It is not merely true in Pennsylvania, Ohio, and Illinois, but even in the New England States,—that classic land of education, where all classes take a pride in the liberal support of all public institutions, such as the school, the church, the public library, etc.

This is a disadvantage not merely for the country but for the city as well. Once let the rural school and other similar institutions become thoroughly low in character, and more and more people will wish to leave the country, and the stream into the cities will be swollen still more. American people will not be content to live permanently in a region where all the institutions which make life worth living are gradually going backwards.

¹ Address before the Section of Economic Science and Statistics of the American Association for the Advancement of Science, at Washington, D.C., Aug. 19-25, 1891, by Edmund J. James, vice-president of the section.

It is for the interest of the whole nation, then, and not merely for that of the farmers, that the attractions of country life shall be increased and not diminished. The existence of good schools, churches, good roads, lyceums, libraries, and other means of education, throughout the country districts is necessary to the welfare of the whole community. Our great cities live upon the country in more senses than one. They are dependent upon it not merely for the material means of living, such as grain and meat, but for population itself. Statistics show that the death-rate in cities is rather higher than the birth-rate, i.e., if the cities could not draw upon the country they would soon begin to decline in size. Such being the case, it is of the highest importance to the cities, and to the country as a whole, that those classes which feed the cities, and give them the very bone and sinew of their existence, shall have the very best opportunities for an education. In the interest of the rural districts themselves the same thing is demanded. The draining away to the cities of the best blood of the young generation inflicts a continual loss upon the country. And yet if the attractions of country life on its intellectual side cannot be increased we may expect to find this loss a continually increasing one. At the very time, then, that farmers ought to be making increased expenditures for public purposes, we find their means of making such expenses curtailed.

The farmer, then, suffers under the changes incident to the continual advance of the country. He suffers from the growing depopulation of the country, and he suffers from the incidence of a system of taxation which did well enough a century ago but is now as antiquated as the plough or wagon of that time. What shall be done to help him?

In the first place, trying to doctor the present system here and there, as I said before, will not help him. We cannot materially improve our present system of taxation by little changes introduced here and there. I take absolutely no stock in the desirability of attempting it, or in the hope of achieving success if it were attempted. A general property tax, such as we have now in most of our American States, I regard as a hopelessly inefficient one, and highly unjust in all its effects. Even if it were possible to do anything with it, I should be opposed to retaining it, as it is, in my opinion, fundamentally vicious in such a condition of society as ours. It is, moreover, impossible to do anything with it, because it cannot be enforced. It is useless to try to ascertain all the property which a man possesses in our society. It was not possible for the tax gatherers in the Middle Ages to do it, when they could apply the thumb-screws *ad libitum* as an assistance to the memory of forgetful tax-payers,—how much less to-day, when no jury in the United States would convict an ordinary citizen of perjury because of false returns to the tax assessor. When it is possible for a man like one of the Vanderbilts to swear that he has only \$100,000 in the world which is liable to the general property tax, and it is impossible to prove the contrary in the case of such a well-known person, what is the use of trying to reach the property of the ordinary citizen by such means? I think I am fully within the truth when I say that no one who has made any study whatever of tax questions thinks that a general property tax upon personal property can be collected. The scientific students of taxation all agree, I think, to a man, that a general property tax of this sort is a relic of mediævalism, and should be abolished as soon as possible.

The farmers of all classes ought to be opposed to such a tax. Why? Because, besides the reasons already given, the effect is more injurious to the country than to the city.

It is easier to collect such a tax in the country, because people in the country know more, as a rule, about the affairs of their neighbors than those of the city. It would be impossible for a farmer to have any great amount of money invested in mortgages, etc., without it coming more or less to the knowledge of his neighbors, and hence to the ears of the assessor. In the city, on the contrary, the individual is lost in the crowd. The result is that as soon as the farmer has any considerable funds in this form there is great temptation to move to the city, and hence another inducement is added to the already too long list which tend to drain the country of its very best elements.

The taxing of mortgages and money at interest is another subject which has attracted a great deal of attention. Who pays this tax? Some authorities say the borrower, some say the lender. Of course, if a tax be levied upon money now invested in mortgages, and collected from the owner of the mortgage, the money-lender must pay it. But how about the new mortgages? If it were possible to reach absolutely all the money up for loan we might make such a combination possible by which the lender would have to pay it. But as things are now, the bulk of the money escaping it altogether, even in those States where such a tax is nominally levied, with many States which do not seriously try to levy such taxes, he must have large faith who believes that the money-lender must pay this tax instead of the farmer, when he charges so much the more interest by reason of the tax. At any rate, it is not an important element in this problem, in my opinion. We must begin at the other end and try to reach quite a different class in the community. We can dispense with the tax on mortgages very easily if we reorganize our revenue system as we ought.

The farmer can be helped, then, as I insisted at the beginning of my paper, only by a radical change in our revenue system — a change which will remove taxation from the place where wealth is not, and put it where it is. To do this we must use the State and National Governments. Speaking generally, his taxation must be lightened, and the income of local communities, particularly the rural districts, must be increased for public purposes. The lines along which this revolution must be made I shall briefly indicate. In the first place, farming property should be exempted from all taxation for State purposes. This has been done already in some of the States, in Delaware among the rest. In Pennsylvania, for example, the tax on real estate is solely for local purposes. The State does not levy any assessments upon real estate for State purposes. This may not seem a very considerable lightening of the burdens, but it is important, since when a man is loaded beyond his strength every decrease of the burden is of significance. In the second place, the State must come to the support of the local community, and that in two ways. It must distribute large sums to the communities for the support of local institutions, like the schools; and it must assume the entire expense of certain public functions, like that of justice, and especially the support of the unfortunate poor, such as the insane, the blind, idiotic, etc., as also the expense for penitentiaries.

The support of the unfortunate poor is something which no local community can reasonably undertake, for it has not the facilities to extend such care to them as our modern humanity demands. All such people ought to be put in asylums and supported at general and not local expense. Nor can the local units afford to provide as they ought for the criminal classes. They are, moreover, oftentimes not at all responsible for the criminal character of the population, as

the latter may have drifted in from other communities, or, indeed, from other States.

The care of the unfortunate and criminal classes requires the employment of highly educated and specially trained people, whose services can not be commanded by localities, even if they could pay the expenses for suitable buildings, which, as a rule, they cannot. The expense of the courts might also be borne by the State to a very large extent. The existence of county courts, for example, does not accrue alone to the benefit of the people of the county, but quite as much to the people of other localities, or indeed of other States, who may have occasion for any reason to claim their services in any action at law.

The support of schools is also a function in which not merely the local community is interested, but all parts of the State as well. I think that every one must say that our farming communities are not at present able to pay the expenses of really good elementary schools. It is, in a large proportion of the rural districts, impossible to find anything more than elementary schools. Yet there is no reason why the advantage of good high schools should not be open to farmers' children as well as to the children of city people. If there were good schools in the country, we should find that many people would stay there who now go to town as soon as they can rake and scrape the money together. The only way in which such school facilities can be offered is for the State to come to their aid in an efficient manner. In many of the States already a school fund is provided, the proceeds of which are distributed among the school districts. In some States this pays the salary of the teacher for six months or more in the year. In other places the State government raises by taxation a large sum, which is distributed in the same way among the school districts. In a few States the State government pays a large share of the expense wherever communities will establish high schools. Adequate educational facilities can never be obtained in this country until the State governments undertake to look after the matter themselves, and contribute handsomely to the support of good schools of all grades. It is simply impossible for the farming districts, under existing conditions, to raise adequate sums for this and all other purposes which they must look after.

Another department in which the localities must be aided is that of maintaining good roads. Since the advent of the railroads we have done next to nothing toward improving our local means of communication. Such abominable, horse-destroying highways as exist in most of our American States you can not find in any other civilized country. The farmers waste as much money, time, and horse flesh in getting their crops to market over a few miles of our ordinary American roads as would suffice to take the crops around the world on a railroad or steamer. Local management and support of the roads, as we try to work it in this country, has always given poor roads in every country where it has been tried. All other civilized countries have gone over to a reasonable system, under which the leading roads of the State are under the supervision of State engineers and at State expense; the roads which are merely county are kept up by the county, while only the very subordinate roads, the paths across the fields, etc., are saddled upon the road district. The roads are, however, to-day of immensely greater importance to the farmer than they were a century ago. In 1800 nearly all the products of the farm were consumed on the farm. To-day the bulk is shipped to market. The cost of transportation is largely a burden on the farmer. Any

diminution in the cost helps him, and it also helps the inhabitant of the city; and while the latter profits by good country roads he contributes nothing to their support, but leaves the entire burden of constructing and maintaining them on the farmers.

Local management of these institutions, then, and the attempt to make the localities pay for them, lead to two things, relative overburdening of the farmers, and inefficient institutions. The general neglect of our country roads leads to the massing of the population along the railroads, placing them still more completely at the mercy of the railroad managers than they are now.

The thoroughgoing reform of our financial system means, however, more than the mere utilization of the State government in lifting the weight of local burdens. It means a further utilization of the Federal Government for the same purpose. Under the political system which we adopted a century ago we distributed the functions of that time among the national, State, and local governments in a way which experience has shown to have worked very well down to a recent date. If the economic conditions of a century ago had remained the same until to-day, the system would be still as good as then. But the railroad came in to modify and change everything. Aided by the federal, State, and local governments to the extent, in many cases, of building their lines for them, they have continued to increase in number and importance until they dominate our whole industry and government. Nothing can be done without their consent. No problem can be solved without considering the railroads. They have changed the centres of trade and industry. They have shifted the centre of agriculture. They determine more and more the lines along which industry and population must move. They have been built and are now building, not necessarily in places where the true interests of the country would have dictated, but oftentimes where ideas of private interest, caprice, and fancy may have ordered. They have built up great sections of the country, it is true, but they have also ruined others. They have developed farmers on the icy plains of Dakota and on the burning sands of New Mexico, but have driven a race of farmers to the wall in New England, Pennsylvania, Delaware, etc. I do not mean to say this is not good. It may lie in the interests of the country to change the centers of industry. But when this is done by a national policy it is not fair to ask one class to bear all the burden.

Now we have given to the nation the most fruitful sources of revenue and to the community the heaviest burdens to bear. The defence of the country against foreign aggression has never been a very heavy burden, and it is destined to become lighter and lighter; but the burden of keeping up the educational institutions of the country, the load of keeping up the means of local communication by the system of country roads, the support of the courts open to all citizens of the United States, the support of the poor, the blind, idiotic, insane, etc., are heavy, and continually growing heavier. To the federal government we have given the right to resort to all sorts of taxation,—duties on imports, on domestic products, on incomes, on lands, on polls, in fact every kind of privilege in this respect consistent with the practices of a free government, except taxes on exports. To the States we have, it is true, also given the right to levy all sorts of taxes except duties on imports and exports; but the industrial circumstances prevent us from resorting to the most fruitful sources, to those places where the real wealth of the community to-day lies. No State dares tax its domestic manufac-

tures, for example, from fear that the manufacturers will move into another State. We cannot levy an income tax, for fear that the citizens will reside somewhere else. This practically keeps us from resorting to the most fruitful sources of revenue altogether. One may say, How is this different from the condition of things a century ago? If our fathers got along well then, why should not we now?

A century ago a State could resort to such taxes as it chose, because the impediments to changing one's residence or moving one's business were practically so great that nothing short of the very heaviest taxation could move one to try to avoid it by altering his location. To-day, on the contrary, thanks to the railway, there is almost no obstacle to living in one State and doing business in another. The merchant in New York city can live in Connecticut, New Jersey, or New York, or even Pennsylvania or Massachusetts, and still be in New York every day for business. The citizen of Wilmington can reside in Delaware, Maryland, Pennsylvania, or New Jersey. Of course under such conditions the various States have to be very careful about levying taxes, and the possibility of adopting taxes which a century ago were easy to use and collect is very much limited.

In a word, our financial system and our industrial system are no longer in harmony, and they are daily growing wider and wider apart. The bodies which have heavy public burdens have only limited financial resources, and those which have large resources have comparatively few functions. The places where the wealth is not are taxed, and those where it is are left untaxed. Now there are only three ways out of the difficulty. Either the functions of the federal government must be increased to correspond with the greater financial power of that body, or greater financial power must be conferred upon the local bodies by allowing them to tax imports from other States in order to enable them to adopt an excise system, or we must collect through the federal government those revenues for local purposes which can be reached only through its agency. The first of these is undesirable, the second impossible, while the third is at once practicable and possible.

If we would have a reasonable system of taxation we must entrust to each public body the collection of such taxes as it can most easily raise. Thus the tax on land can easily be raised by the local bodies, such as city, school district, township, and county. The taxes on corporations which do business over a whole State, like the railroad corporations, cannot be collected by the local communities. Nothing is more ridiculous than for a township, for example, to try to collect a tax on a railroad which runs through it. If it assesses merely the value of the road-bed for what may be termed ordinary uses, the assessment is, of course, ridiculously low. If the local assessors attempt to assess such a part of the whole value of the road as the local part bears to the whole length of the line, they have no means of compelling payment or of proving that their assessment is a fair or just one. The only sensible thing is to allow the State government to tax the railroads and divide the results of the tax among the communities in the State. The same thing is true of other sorts of taxes as well.

In the same way the collection of import duties is one of the most fruitful sources of taxation, and that whether you take a so-called tariff for revenue only, or a so-called protective tariff. No State or local community can collect these taxes, and yet to let these taxes go uncollected would be a very short-sighted financial policy, since you can raise large sums by this device without injuring the country at all.

Take, again, the whole line of manufacturing trusts and similar organizations in this country, the Standard Oil monopoly, for example. Here is an excellent subject for national taxation. No State can reach it. It has practically withdrawn itself from State control, and as we make no attempt to control it by national means, it is practically untaxed. Now this is very foolish and unreasonable. What shall be done about it? No city or county or State can tax it. Shall we let it continue to go untaxed? By no means. We should tax it through the agency of the national government, and take the proceeds for local purposes.

We must no longer look upon the county government as opposed to the township in matters of taxation, or the State to the county, or the federal government to the State, but upon all as a part of one and the same system of government, to be used by the people in the manner and to the extent to which its interest may dictate.

In a word, then, the solution of the financial difficulty in this country, as I look at it, is simply this: Let us use each part of the government, city, town, school district, county, State, and nation, to administer those taxes which it can most easily manage, and then divide the proceeds upon such basis as experience may dictate to be the best. Briefly indicated, and only in the most general way, the land tax ought to be left to the ultimate unit—city, town, road, school, poor district, etc. The State ought to levy an elaborate system of corporation taxes upon such corporations as it can efficiently reach; and, finally, the nation ought to levy the indirect taxes, such as excise and customs duties, and such other taxes as circumstances may show to be desirable, such as taxes upon the great combinations of capital which extend their operations over the whole country, and possibly also upon incomes. We should take the proceeds of such taxes beyond what may be necessary for an economical administration of federal affairs, and utilize them for local purposes. The States should use the funds derived from the taxes administered by itself, partly for the performance of a larger range of functions, partly in assisting in the performance of local functions, as in making roads, etc., and partly in distribution among local units for local purposes, as schools, etc.

I am all the surer that this is the proper solution, as it is the one which modern nations situated somewhat like our own have found it necessary to adopt. As said above, the problems of modern taxation have come up in all nations in a very similar form. Local taxation has assumed an importance hitherto unknown, and the relation of the farming class to other classes in this matter has been a troublesome one. England, France, and Germany, which in their economic conditions most resemble our own country, have all found it necessary to resort to some such plan as that here outlined.

No amount of patching is going to help us in this matter. No attempt to strengthen the hands of local tax assessors or tax collectors is going to afford any permanent relief. The more tax commissions we have which give such advice as the late ones have given us, the more money will be wasted, and the time will be the more delayed when a reasonable system will take the place of the present antiquated patch-work.

Before closing, I should like to revert again to a point already mentioned, touch upon another phase of the question which I regard as even more fundamental than that of taxation, important as is the latter, and that is, the whole economical condition of the farmer as compared with the other

classes in the community. I touched, at the beginning of my address, upon the revolution which the modern system of transportation had effected in the condition of the farmer; how it has brought into competition with him not only the farmer of the Mississippi Valley, but has planted a competitor on the slopes of the Pacific, nay, even opened up Africa and Australia as competing territories. The farmer was formerly assured of a certain even though it were a small market. His market is now large but very uncertain.

The farmer feels the burden of taxation, in a word, largely because his economic situation has become an unfavorable one. The prices of agricultural products of the staple variety have gone down in the great European market upon which we rely to dispose of our surplus products. It looks very much as if they would never rise again, at least not for a long time to come. The settlement of Australia, of South America, and of Africa will more than keep pace with the wants of the world for breadstuffs; and until Russia, Asia, India, Africa, Australia, and South America are so fully settled that they will consume their own food-crops we need not expect to see a rise in the price of staples. No amount of bait thrown out to European nations in the form of low tariffs is going to persuade them to take our corn and wheat at high prices when they can get Russian and Indian products at low prices.

Now if this be a true diagnosis of present conditions, what can the farmer do to be saved from being ground to powder between the upper and nether millstones; between a system of taxation, on the one hand, which leaves the great accumulations of wealth relatively untouched, and rests chiefly on agriculture, and a world-economic movement, on the other, which is knocking the bottom out of all staple products? My answer to this question, as far as the first point is concerned, is to reform your system of taxation; as to the second, make yourselves independent of the staples. Let us try to discover and utilize new products. We can no longer rely upon the old crops to keep us alive. We must discover new branches of agriculture. Perhaps it will be found, as in Germany, in the discovery of a sugar plant, or in the cultivation of tea or coffee, or a new textile plant, or something else. Now from what source have we to look for the introduction of such a plant or plants? Who can bear the initial expense of ascertaining by a long series of costly experiments what kind of soil and climate are best fitted to each new crop. Manifestly only the government. Hence the absolute necessity of the government experiment station, planted in every State, and endowed on such a scale as will enable it to make the most costly and long-continued experiments upon every new crop which seems to promise any hope of naturalization. We have been naturalizing men long enough. Let us now try systematic plans to naturalize every useful plant which is to be found in any other country. The federal government has begun this work on a fairly liberal scale. It should be your business as farmers to see that these appropriations shall be made on a still larger scale than ever, and that in each district in the State a careful examination of soil and climate by scientific experts shall be made, with a view of determining what new crops can be introduced into such places. In this way you will find that the introduction of a new crop will go a long way toward solving the taxation and all other problems, since it will introduce prosperity where adversity now prevails—an expanding agriculture instead of a declining one, etc.

Perhaps a word might not be out of place at this point as

to the work of the experiment stations themselves. I cannot help feeling that much of their effort has not been so economically applied as it might be. It is, of course, an interesting fact to know what the growing power of a pumpkin is, for example. How many tons a water-melon vine can lift in the course of a year, and similar items of information, may, in the course of time, when all added together, produce valuable practical results; but I cannot but believe that a much larger share of the time and effort should be devoted to ascertaining the possible uses of the thousand-and-one forms of vegetable life around us. Man progresses but slowly. Of the thousands of plants which cover the face of the earth we have found use for comparatively few. They are mostly still ranked in the category of weeds, i.e., useless or injurious plants. It has not been so very long since the potato was in this category. Now it is my opinion that every plant has some valuable use or other if we only knew it. It is pre-eminently the work of such scientific stations to enlarge the number of useful plants by such experimentation as shall test their applicability to one or another of the practical arts. He who makes two blades of grass to grow where only one grew before is a benefactor of the race. How much more a benefactor he who gives two useful plants instead of one. Who can calculate the advantage to humanity of the development of the potato or of the sugar beet?

The scientific experimental station, then, should give us new plants, naturalize those already known, and determine the best conditions for the cultivation of all kinds which may be made to grow in any given locality. The same thing should be done, of course, for animals as for vegetables. There is little doubt that in each State, for example, many plants and animals could be profitably cultivated which are practically unknown at present. The experimental stations should work at these problems until they are successfully solved. I say at each station, for the station of Pennsylvania, or that of Illinois, or Ohio, will benefit Alabama only indirectly, since crops which will grow very well in the former States will not grow well in the latter, and many which might prove profitable in the latter would not grow in those States at all. Each locality must solve its own problems in this respect for itself. It has been found, for example, even in such a small country as Germany, that a beet which will produce a large quantity of sugar in one part of the country, when taken to another loses its sugar very quickly. How much more would that be the case in such a country as our own.

Let us keep up our experiment stations then. Watch them closely, to see that they are at work at useful things, but support them liberally. See to it that the federal government, which has now begun the support of these institutions, shall deal liberally with them. Give them all the money they can wisely use. We shall find that that will be a great deal, and you will find that it will very well pay for itself.

HEALTH MATTERS.

The Tetaniferous Man.

VERNEUIL applies this term to the individual who carries the virus of tetanus around on his person, although unaffected by the disease himself. The author discusses the causes and means of prevention of this affection from a clinical standpoint. If one considers the horse, with its secretions, excretions, and surroundings, as all-capable of propagating tetanus, we cannot regard as impossible infection by the secretions and excretions of man. The

tetanic property of equine saliva has been demonstrated. The saliva of a human being may, for the time being, contain tetanus germs, and thus a bite from such an individual may cause tetanus. A case is given illustrating this. The secretions and excretions are only infected by the ingesta, so that the sperm, milk, and urine are never infected by the virus. He says, according to the *University Medical Magazine*: "I have already admitted, and now I admit more than ever, that a surgeon who has dressed a tetanoid patient may communicate the disease to other patients. I also admit that any person whatever, but above all a physician whose hands have been in contact with a horse, not tetanic, but simply tetaniferous, may infect the wounds of his fellow-beings, as in the cases cited. I also admit, finally, that such a man is not only dangerous to those whom he approaches, but may even give himself tetanus by auto-inoculation, either by wounding a part of the skin impregnated with the virus, as the plantar and palmar regions, or touching a wound on any part of his body with his impure hands." Two cases follow, in which he traces the cause to a wound inflicted on the skin, which was previously infected with the tetanic virus. The bacillus of Nicolaier was found in one of these cases. Three additional cases are given with a very careful analytical study of each.

London's Soot.

The amount of carbonaceous and other particles deposited upon glass houses is a good indication of what the London atmosphere contains, and in many places it is only possible to procure a due admission of light to the plants by frequently washing the glass roofs. At one establishment, says the *Pharmaceutical Record*, two tanks constructed to collect the rain from a house completed a few years since, were cleared out, and no less than ten barrow-loads of sooty matter were removed, all of which must have been conveyed into the tanks from the glass. One scientific man has been engaged in computing the amount of soot deposited from London air, and arrived at the following conclusions. He collected the smoke deposited on a patch of snow in Canonbury one square link (about 8 inches) in extent, and obtained from it two grains of soot. As London covers 110 square miles, this would give us for the whole area 1,000 tons. As the quantity measured fell in 10 days, a month's allowance would need 1,000 horses to cart it off, and these stretched in a line would extend four miles.

Origin and Role of Pus Cells.

Professor Ranvier made an interesting communication at a recent meeting of the Academy of Sciences on the origin and significance of pus cells. He said (*Brit. Med. Jour.*) that for some years past histologists generally were agreed that the cells of pus were none other than the white corpuscles of the blood, which had emigrated from the vessels at the time suppuration was set up. He found it difficult, however, to believe that the blood could yield in this way, and in a time comparatively short, the enormous quantity of pus found in many pathological conditions, such, for example, as the purulent infection of wounds, accidental and operative. That the white cells do emigrate in the manner generally accepted he had no doubt. This takes place under normal physiological conditions, while it is still more pronounced in certain pathological states not ending in actual inflammation, in the process of which it is, of course, abundantly evident. What his experiments led him to establish, however, was that pus cells had also quite another origin, viz., the transformation into lymph cells of clasmotocytes, elements derived from migratory cells, which under the influence of irritation revert to an embryonic condition and proliferate rapidly. As to the rôle of the pus cells, M. Metchnikoff has shown the importance of lymphatic cells in the combat of the organism against microbes. In simple inflammation determined by caustics, or other irritant agents, their rôle is not less important. They eliminate the dead elements, and thus prepare the way for the processes of regeneration.

The Value of the Tongue as a Respirator.

J. M. Elborough writes as follows to the *Lancet*: It is not generally known that nature has provided each of us with the best respirator always at hand in the tongue. For years I have per-