

in our times. I have met no one who combined all these qualities in himself so perfectly as H. A. Lorentz. The marvellous thing about the effect of his personality was this: Independent and headstrong natures, such as are particularly common among men of learning, do not readily bow to another's will and for the most part only accept his leadership grudgingly. But, when Lorentz is in the presidential chair, an atmosphere of happy co-operation is invariably created, however much those present may differ in their aims and habits of thought. The secret of this success lies not only in his swift comprehension of people and things and his marvellous command of language, but above all in this, that one feels that his whole heart is in the business in hand, and that, when he is at work, he has room for nothing else in his mind. Nothing disarms the recalcitrant so much as this.

Before the war Lorentz's activities in the cause of international relations were confined to presiding at congresses of physicists. Particularly noteworthy among these were the Solvay Congresses, the first two of which were held at Brussels in 1909 and 1912. Then came the European war, which was a crushing blow to all who had the improvement of human relations in general at heart. Even before the war was over, and still more after its end, Lorentz devoted himself to the work of reconciliation. His efforts were especially directed towards the re-establishment of fruitful and friendly co-operation between men of learning and scientific societies. As an outsider can hardly conceive what uphill work this is. The accumulated resentment of the war period has not yet died down and many influential men persist in the irreconcilable attitude in which they allowed themselves to be driven by the pressure of circumstances. Hence Lorentz's efforts resemble those of a doctor with a recalcitrant patient who refuses to take the medicines carefully prepared for his benefit.

But Lorentz is not to be deterred, once he has recognized a course of action as the right one. The moment the war was over, he joined the governing body of the "Conseil de recherche," which was founded by the savants of the victorious countries, and from which the savants and learned societies of the Central Powers were excluded. His object in taking this step, which caused great offence to the academic world of the Central Powers, was to influence this institution in such a way that it could be expanded into something truly international. He and other right-minded men succeeded, after repeated efforts, in securing the removal of the offensive exclusion-clause from the statutes of the "Conseil." The goal, which is the restoration of normal and fruitful co-operation between learned societies, is, however, not yet attained, because the academic world of the Central Powers, exasperated by nearly ten years of exclusion from practically all international gatherings, has got into a habit of keeping itself to itself. Now, however, there are good grounds for

hoping that the ice will soon be broken, thanks to the tactful efforts of Lorentz, prompted by pure enthusiasm for the good cause.

Lorentz has also devoted his energies to the service of international cultural ends in another way, by consenting to serve on the League of Nations Commission for international intellectual co-operation, which was called into existence some five years ago with Bergson as chairman. For the last year Lorentz has presided over the Commission, which, with the active support of its subordinate, the Paris Institute, is to act as a go-between in the domain of intellectual and artistic work among the various spheres of culture. There too the beneficent influence of this intelligent, humane, and modest personality, whose unspoken but faithfully followed advice is, "Not mastery but service," will lead people in the right way.

May his example contribute to the triumph of that spirit !

In Honour of Arnold Berliner's Seventieth Birthday

(Arnold Berliner is the editor of the periodical *Die Naturwissenschaften*.)

I should like to take this opportunity of telling my friend Berliner and the readers of this paper why I rate him and his work so highly. It has to be done here because it is one's only chance of getting such things said; since our training in objectivity has led to a aloofness on everything personal, which we mortals may transgress only on quite exceptional occasions such as the present one.

And now, after this dash for liberty, back to the objective! The province of scientifically determined fact has been enormously extended, theoretical knowledge has become vastly more profound in every department of science. But the assimilative power of the human intellect is and remains strictly limited. Hence it was inevitable that the activity of the individual investigator should be confined to a smaller and smaller section of human knowledge. Worse still, as a result of this specialization, it is becoming increasingly difficult for even a rough general grasp of science as a whole, without which the true spirit of research is inevitably handicapped, to keep pace with progress. A situation is developing similar to the one symbolically represented in the Bible by the story of the Tower of Babel. Every serious scientific worker is painfully conscious of this involuntary relegation to an ever-narrowing sphere of knowledge, which is threatening to deprive the investigator of his broad horizon and degrade him to the level of a mechanic.

Obituary of the Surgeon, M. Katzenstein

During the eighteen years I spent in Berlin I had few close friends, and the closest was Professor Katzenstein. For more than ten years I spent my leisure hours during the summer months with him, mostly on his delightful yacht. There we confided our experiences, ambitions, emotions to each other. We both felt that this friendship was not only a blessing because each understood the other, was enriched by him, and found in him that responsive echo so essential to anybody who is truly alive; it also helped to make both of us more independent of external experience, to objectivize it more easily.

I was a free man, bound neither by many duties nor by harassing responsibilities; my friend, on the contrary, was never free from the grip of urgent duties and anxious fears for the fate of those in peril. If, as was invariably the case, he had performed some dangerous operations in the morning, he would ring up on the telephone, immediately before we got into the boat, to enquire after the condition of the patients about whom he was worried; I could see how deeply concerned he was for the lives entrusted to his care. It was marvellous that this shackled outward existence did not clip the wings of his soul; his imagination and his sense of humour were irrepressible. He never became the typical conscientious North German, whom the Italians in the days of their freedom used to call *pesteia seriosa*. He was sensitive as a youth to the romantic beauty of the lakes and woods of Brandenburg, and as he sailed the boat with an expert hand through these beloved and familiar surroundings he opened the secret treasure-chamber of his heart to me--he spoke of his experiments, scientific ideas, and ambitions. How he found time and energy for them was always a mystery to me; but the passion for scientific enquiry is not to be crushed by any burdens. The man who is possessed with it perishes sooner than it does.

There were two types of problems that engaged his attention. The first forced itself on him out of the necessities of his practice. Thus he was always thinking out new ways of inducing healthy muscles to take the place of lost ones, by ingenious transplantation of tendons. He found this remarkably easy, as he possessed an uncommonly strong spatial imagination and a remarkably sure feeling for mechanism. How happy he was when he had succeeded in making somebody fit for normal life by putting right the muscular system of his face, foot, or arm! And the same when he avoided an operation, even in cases which had been sent to him by physicians for surgical treatment in cases of gastric ulcer by neutralizing the pepsin. He also set great store by the treatment of peritonitis by an anti-toxic coli-serum which he discovered, and rejoiced in the successes he achieved with it. In talking of it he often lamented

complains about others who are struggling for their place in the sun too after their own fashion.

Therefore pocket your temperament and keep your manuscript for your sons and daughters, in order that they may derive consolation from it and--not give a damn for what their teachers tell them or think of them.

Incidentally I am only coming to Princeton to research, not to teach. There is too much education altogether, especially in American schools. The only rational way of educating is to be an example--of what to avoid, if one can't be the other sort.

With best wishes.

To the Schoolchildren of Japan

In sending this greeting to you Japanese schoolchildren, I can lay claim to a special right to do so. For I have myself visited your beautiful country, seen its cities and houses, its mountains and woods, and in them Japanese boys who had learnt from them to love their country. A big fat book full of coloured drawings by Japanese children lies always on my table.

If you get my message of greeting from all this distance, be mindful that ours is the first age in history to bring about friendly and understanding intercourse between people of different countries. In former times nations passed their lives in mutual ignorance, and in fact hated or feared one another. May the spirit of brotherly understanding gain ground more and more among them. With this in mind I, an old man, greet you Japanese schoolchildren from afar and hope that your generation may some day put mine to shame.

Teachers and Pupils

An address to children

(The principal art of the teacher is to awaken the joy in creation and knowledge.)

My dear Children,

I rejoice to see you before me to-day, happy youth of a sunny and fortunate land.

innocent visitor must not be expected to rack his brains too much, and, when all is said and done, it is not absolutely certain that every question admits of a rational answer.

The second thing that strikes a visitor is the joyous, positive attitude to life. The smile on the faces of the people in photographs is symbolical of one of the American's greatest assets. He is friendly, confident, optimistic, and--without envy. The European finds intercourse with Americans easy and agreeable.

Compared with the American, the European is more critical, more self-conscious, less goodhearted and helpful, more isolated, more fastidious in his amusements and his reading, generally more or less of a pessimist.

Great importance attaches to the material comforts of life, and peace, freedom from care, security are all sacrificed to them. The American lives for ambition, the future, more than the European. Life for him is always becoming, never being. In this respect he is even further removed from the Russian and the Asiatic than the European is. But there is another respect in which he resembles the Asiatic more than the European does: he is less of an individualist than the European--that is, from the psychological, not the economic, point of view.

More emphasis is laid on the "we" than the "I." As a natural corollary of this, custom and convention are very powerful, and there is much more uniformity both in outlook on life and in moral and æsthetic ideas among Americans than among Europeans. This fact is chiefly responsible for America's economic superiority over Europe. Co-operation and the division of labour are carried through more easily and with less friction than in Europe, whether in the factory or the university or in private good works. This social sense may be partly due to the English tradition.

In apparent contradiction to this stands the fact that the activities of the State are comparatively restricted as compared with Europe. The European is surprised to find the telegraph, the telephone, the railways, and the schools predominantly in private hands. The more social attitude of the individual, which I mentioned just now, makes this possible here. Another consequence of this attitude is that the extremely unequal distribution of property leads to no intolerable hardships. The social conscience of the rich man is much more highly developed than in Europe. He considers himself obliged as a matter of course to place a large portion of his wealth, and often of his own energies too, at the disposal of the community, and public opinion, that all-powerful force, imperiously demands it of him. Hence the most important cultural

mechanical methods of warfare is such that human life will become intolerable if people do not before long discover a way of preventing war. The importance of this object is only equalled by the inadequacy of the attempts hitherto made to attain it.

People seek to minimize the danger by limitation of armaments and restrictive rules for the conduct of war. But war is not like a parlour-game in which the players loyally stick to the rules. Where life and death are at stake, rules and obligations go by the board. Only the absolute repudiation of all war is of any use here. The creation of an international court of arbitration is not enough. There must be treaties guaranteeing that the decisions of this court shall be made effective by all the nations acting in concert. Without such a guarantee the nations will never have the courage to disarm seriously.

Suppose, for example, that the American, English, German, and French Governments insisted on the Japanese Government's putting an immediate stop to their warlike operations in China, under pain of a complete economic boycott. Do you suppose that any Japanese Government would be found ready to take the responsibility of plunging its country into such a perilous adventure? Then why is it not done? Why must every individual and every nation tremble for their existence? Because each seeks his own wretched momentary advantage and refuses to subordinate it to the welfare and prosperity of the community.

That is why I began by telling you that the fate of the human race was more than ever dependent on its moral strength to-day. The way to a joyful and happy state is through renunciation and self-limitation everywhere.

Where can the strength for such a process come from? Only from those who have had the chance in their early years to fortify their minds and broaden their outlook through study. Thus we of the older generation look to you and hope that you will strive with all your might to achieve what was denied to us.

To Sigmund Freud

Dear Professor Freud,

It is admirable the way the longing to perceive the truth has overcome every other desire in you. You have shown with irresistible clearness how inseparably the combative and destructive instincts are bound up with the amative and vital ones in the human psyche. At the same time a deep yearning for that great consummation, the internal and external liberation of

everyone who cares for civilization and justice must exert all his strength to convince his fellows of the necessity for laying all countries under an international obligation of this kind.

It will be urged against this notion, not without a certain justification, that it over-estimates the efficacy of machinery, and neglects the psychological, or rather the moral, factor. Spiritual disarmament, people insist, must precede material disarmament. They say further, and truly, that the greatest obstacle to international order is that monstrously exaggerated spirit of nationalism which also goes by the fair-sounding but misused name of patriotism. During the last century and a half this idol has acquired an uncanny and exceedingly pernicious power everywhere.

To estimate this objection at its proper worth, one must realize that a reciprocal relation exists between external machinery and internal states of mind. Not only does the machinery depend on traditional modes of feeling and owe its origin and its survival to them, but the existing machinery in its turn exercises a powerful influence on national modes of feeling.

The present deplorably high development of nationalism everywhere is, in my opinion, intimately connected with the institution of compulsory military service or, to call it by its less offensive name, national armies. A country which demands military service of its inhabitants is compelled to cultivate a nationalistic spirit in them, which provides the psychological foundation of military efficiency. Along with this religion it has to hold up its instrument, brute force, to the admiration of the youth in its schools.

The introduction of compulsory service is therefore, to my mind, the prime cause of the moral collapse of the white race, which seriously threatens not merely the survival of our civilization but our very existence. This curse, along with great social blessings, started with the French Revolution, and before long dragged all the other nations in its train.

Therefore those who desire to encourage the growth of an international spirit and to combat chauvinism must take their stand against compulsory service. Is the severe persecution to which conscientious objectors to military service are subjected to-day a whit less disgraceful to the community than those to which the martyrs of religion were exposed in former centuries? Can you, as the Kellogg Pact does, condemn war and at the same time leave the individual to the tender mercies of the war machine in each country?

If, in view of the Disarmament Conference, we are not to restrict ourselves to the technical problems of organization involved but also to tackle the

without them even the people of the richest country suffocate. The fact is that since the amount of work needed to supply everybody's needs has been reduced through the improvement of technical methods, the free play of economic forces no longer produces a state of affairs in which all the available labour can find employment. Deliberate regulation and organization are becoming necessary to make the results of technical progress beneficial to all.

If the economic situation cannot be cleared up without systematic regulation, how much more necessary is such regulation for dealing with the problems of international politics! Few people still cling to the notion that acts of violence in the shape of wars are either advantageous or worthy of humanity as a method of solving international problems. But they are not logical enough to make vigorous efforts on behalf of the measures which might prevent war, that savage and unworthy relic of the age of barbarism. It requires some power of reflection to see the issue clearly and a certain courage to serve this great cause resolutely and effectively.

Anybody who really wants to abolish war must resolutely declare himself in favour of his own country's resigning a portion of its sovereignty in favour of international institutions: he must be ready to make his own country amenable, in case of a dispute, to the award of an international court. He must in the most uncompromising fashion support disarmament on all round, which is actually envisaged in the unfortunate Treaty of Versailles; unless military and aggressively patriotic education is abolished, we can hope for no progress.

No event of the last few years reflects such disgrace on the leading civilized countries of the world as the failure of all disarmament conferences so far; for this failure is due not only to the intrigues of ambitious and unscrupulous politicians, but also to the indifference and slackness of the public in all countries. Unless this is changed we shall destroy all the really valuable achievements of our predecessors.

I believe that the American nation is only imperfectly aware of the responsibility which rests with it in this matter. People in America no doubt think as follows: "Let Europe go to the dogs, if it is destroyed by the quarrelsomeness and wickedness of its inhabitants. The good seed of our Wilson has produced a mighty poor crop in the stony ground of Europe. We are strong and safe and in no hurry to mix ourselves up in other people's affairs."

Such an attitude is at once base and shortsighted. America is partly to blame for the difficulties of Europe. By ruthlessly pressing her claims she is hastening the economic and therewith the moral collapse of Europe; she has helped to

Balkanize Europe, and therefore shares the responsibility for the breakdown of political morality and the growth of that spirit of revenge which feeds on despair. This spirit will not stop short of the gates of America--I had almost said, has not stopped short. Look around, and look forward.

The truth can be briefly stated: The Disarmament Conference comes as a final chance, to you no less than to us, of preserving the best that civilized humanity has produced. And it is on you, as the strongest and comparatively soundest among us, that the eyes and hopes of all are focused.

Active Pacifism

I consider myself lucky in witnessing the great peace demonstration organized by the Flemish people. To all concerned in it I feel impelled to call out in the name of men of good will with a care for the future: "In this hour of opened eyes and awakening conscience we feel ourselves united with you by the deepest ties."

We must not conceal from ourselves that an improvement in the present depressing situation is impossible without a severe struggle; for the handful of those who are really determined to do something is minute in comparison with the mass of the lukewarm and the misguided. And those who have an interest in keeping the machinery of war going are a very powerful body; they will stop at nothing to make public opinion subservient to their murderous ends.

It looks as if the ruling statesmen of today were really trying to secure permanent peace. But the ceaseless piling-up of armaments shows only too clearly that they are unequal to coping with the hostile forces which are preparing for war. In my opinion, deliverance can only come from the peoples themselves. If they wish to avoid the degrading slavery of war-service, they must declare with no uncertain voice for complete disarmament. As long as armies exist, any serious quarrel will lead to war. A pacifism which does not actually try to prevent the nations from arming is and must remain impotent.

May the conscience and the common sense of the peoples be awakened, so that we may reach a new stage in the life of nations, where people will look back on war as an incomprehensible aberration of their forefathers!

Letter to a Friend of Peace

It has come to my ears that in your greatheartedness you are quietly accomplishing a splendid work, impelled by solicitude for humanity and its fate. Small is the number of them that see with their own eyes and feel with

although even that is doubtful. By "over-production" people usually mean a condition of things in which more of one particular article is produced than can, in existing circumstances, be sold, in spite of a shortage of consumption-goods among consumers. This condition of things I call apparent over-production. In this case it is not the demand that is lacking but the consumers' purchasing-power. Such apparent over-production is only another word for a crisis, and therefore cannot serve as an explanation of the latter; hence people who try to make over-production responsible for the crisis are merely juggling with words.

(2) Reparations. The obligation to pay reparations lies heavy on the debtor nations and their industries, compels them to go in for dumping, and so harms the creditor nations too. This is beyond dispute. But the appearance of the crisis in the United States, in spite of the high tariff-wall protecting them, proves that this cannot be the principal cause of the world crisis. The shortage of gold in the debtor countries due to reparations can at most serve as an argument for putting an end to these payments; it cannot be dragged in as an explanation of the world crisis.

(3) Erection of new tariff-walls. Increase in the unproductive burden of armaments. Political insecurity owing to latent danger of war. All these things add considerably to the troubles of Europe, but do not materially affect America. The appearance of the crisis in America shows that they cannot be its principal causes.

(4) The dropping out of the two Powers, China and Russia. This blow to world trade also does not touch America very nearly, and therefore cannot be a principal cause of the crisis.

(5) The economic rise of the lower classes since the War. This, supposing it to be a reality, could only produce a scarcity of goods, not an excessive supply.

I will not weary the reader by enumerating further contentions which do not seem to me to get to the heart of the matter. Of one thing I feel certain: this same technical progress which, in itself, might relieve mankind of a great part of the labour necessary to its subsistence, is the main cause of our present troubles. Hence there are those who would in all seriousness forbid the introduction of technical improvements. This is obviously absurd. But how can we find a more rational way out of our dilemma?

If we could somehow manage to prevent the purchasing-power of the masses, measured in terms of goods, from sinking below a certain minimum,

to make it possible and necessary for the younger people to take part in the productive process. Further, that the older people ought to be excluded from certain sorts of work (which I call "unqualified" work), receiving instead a certain income, as having by that time done enough work of a kind accepted by society as productive.

I too am in favour of abolishing large cities, but not of settling people of a particular type--e.g., old people--in particular towns. Frankly, the idea strikes me as horrible. I am also of opinion that fluctuations in the value of money must be avoided, by substituting for the gold standard a standard based on certain classes of goods selected according to the conditions of consumption--as Keynes, if I am not mistaken, long ago proposed. With the introduction of this system one might consent to a certain amount of "inflation," as compared with the present monetary situation, if one could believe that the State would really make a rational use of the windfall thus accruing to it.

The weaknesses of your plan lie, so it seems to me, in the sphere of psychology, or rather, in your neglect of it. It is no accident that capitalism has brought with it progress not merely in production but also in knowledge. Egoism and competition are, alas, stronger forces than public spirit and sense of duty. In Russia they say, it is impossible to get a decent piece of bread... Perhaps I am over-pessimistic concerning State and other forms of communal enterprise, but I expect little good from them. Bureaucracy is the death of all sound work. I have seen and experienced too many dreadful warnings, even in comparatively model Switzerland.

I am inclined to the view that the State can only be of real use to industry as a limiting and regulative force. It must see to it that competition among the workers is kept within healthy limits, that all children are given a chance to develop soundly, and that wages are high enough for the goods produced to be consumed. But it can exert a decisive influence through its regulative function if--and there again you are right--its measures are framed in an objective spirit by independent experts.

I would like to write to you at greater length, but cannot find the time.

Certain proceedings and pronouncements of the English administration have been justly criticized. We must not, however, leave it at that but learn by experience.

We need to pay great attention to our relations with the Arabs. By cultivating these carefully we shall be able in future to prevent things from becoming so dangerously strained that people can take advantage of them to provoke acts of hostility. This goal is perfectly within our reach, because our work of construction has been, and must continue to be, carried out in such a manner as to serve the real interests of the Arab population also.

In this way we shall be able to avoid getting ourselves quite so often into the position, disagreeable for Jews and Arabs alike, of having to call in the mandatory Power as arbitrator. We shall thereby be following not merely the dictates of Providence but also our traditions, which alone give the Jewish community meaning and stability.

For that community is not, and must never become, a political one; this is the only permanent source whence it can draw new strength and the only ground on which its existence can be justified.

IV

For the last two thousand years the common property of the Jewish people has consisted entirely of the past. Scattered over the wide world, our nation possessed nothing in common except its carefully guarded tradition. Individual Jews no doubt produced great work, but it seemed as if the Jewish people as a whole had not the strength left for great collective achievements.

Now all that is changed. History has set us a great and noble task in the shape of active cooperation in the building up of Palestine. Eminent members of our race are already at work with all their might on the realization of this aim. The opportunity is presented to us of setting up centres of civilization which the whole Jewish people can regard as its work. We nurse the hope of erecting in Palestine a home of our own national culture which shall help to awaken the near East to new economic and spiritual life.

The object which the leaders of Zionism have in view is not a political but a social and cultural one. The community in Palestine must approach the social ideal of our forefathers as it is laid down in the Bible, and at the same time become a seat of modern intellectual life, a spiritual centre for the Jews of the whole world. In accordance with this notion, the establishment of a Jewish university in Jerusalem constitutes one of the most important aims of the