deposited, layer by layer, from without inwards, and when so deposited may become consolidated and organised.

To insure a successful result there must, however, be another condition, on which Mr. Tufnell lays considerable stress. But, unfortunately, it is one which cannot be counted on with any degree of certainty until a trial of the treatment has been systematically made—and that is that the outer wall of the aneurysm must consist of part, at least, of the arterial coverings. Where this vital covering does not exist, coagulation and fibrination do not take place. To the absence of this covering, which receives its independent vital supply, is to be attributed the failure of the treatment in those aneurysms which, springing from the back or side of the abdominal aorta, cause absorption and destruction of the arterial walls by their growth and pressure against the vertebral column or the ribs, and where consequently these structures (which are themselves continuously undergoing retrograde metamorphosis and absorption) form the posterior limit to the aneurysmal sac.

ART. XIII.—*On the Necessity of an International Pharmacopœia, considered from the Point of View of the Medical Profession.*^a

By F. J. B. QUINLAN, M.D., Dubl.; Professor of Materia Medica and Therapeutics, Catholic University Medical College; and Examiner in the same, and in the Royal University of Ireland.

UP to about a quarter of a century ago we had in the United Kingdom of Great Britain and Ireland no less than three distinct and perfectly independent pharmacopœias—those of London, of Dublin, and of Edinburgh; and many inconveniences and occasionally dangers resulted therefrom, although the differences in the strengths of many of the more active preparations were not as pronounced as may now be found in those of the different European Pharmacopœias of the present day. Many of our most distinguished physicians had recommended the incorporation of our three pharmacopœias; but local prejudices or mistaken national sentiments prevented this fusion, and it is possible that the anomaly might have continued to the present had not the sharp sword of an Act of our Imperial Parliament cut this Gordian knot by ordaining the preparation of one uniform pharmacopœia for the United Kingdom of

^a This is a translation of an Address delivered in French in the Palais des Académies, Brussels, before the International Pharmaceutical Congress, on the 1st of September, 1885.

Great Britain and Ireland, along with the colonies and dependencies thereof. This great work was accomplished by the representatives of our three kingdoms, and soon every one asked why it had not been always so? The Irish or Scottish physician who entered into our military or naval medical services was no longer obliged to study a new pharmacopœia; and, correspondingly, the Englishman who travelled in Ireland or Scotland, carrying with him some favourite prescription, was no longer uneasy lest its compounding might be interfered with by some divergence in the local pharmacopœia. Up to this time in reading one of our medical works it was usually advisable to consider in which of the three pharmacopœias each prescription was written, but even this inconvenience was now removed, and ever since complete pharmaceutical unity has reigned throughout the great section of the human race which reposes beneath the shadow of the British flag. We have at home our political differences, and many persons especially in Ireland are in favour of local domestic legislation, but not even the most extreme advocates of this view would wish to restore the Dublin pharmacopœia, or to interfere with the pharmaceutical unity of our English speaking race. In fact, our young physicians do not remember the existence of our three local pharmacopœias, and the seniors now perceive that they were in every way inferior to our present uniformity.

I do not propose to-day to urge the abstract advantages of an universal pharmacopœia for the civilised world. That proposal was first formulated at the International Pharmaceutical Congress, held at Brunswick in 1865, and is now, I believe, generally admitted. Neither do I propose to make suggestions as to the best method of carrying out the details of a work which has occupied the attention of every succeeding Congress, and which has been most ably and exhaustively treated in the three reports of Professor Norbert Gille, of this city (Brussels). And I am aware, moreover, that Herr Von Waldheim, of Vienna, will lay before us to-day a specimen section^a of the proposed International Pharmacopœia. I will merely say that I am of opinion that the universal pharmacopœia ought to be in the Latin language; that the metric system of weights and measures ought to be employed; and that the heat scale adopted should be

^a This specimen section was distributed among the members of the Congress. It was very beautifully printed in the Latin language, and gave the component parts of every preparation, with directions for making them up. The difficulty of weights was got over by multiple proportions on a decimal scale. It did not give doses.

that of Celsius (centigrade). I am further of opinion that the new pharmacopœia should aim merely at establishing everywhere uniform pharmaceutical preparations, and should not enter into the question of doses, as is done in some local pharmacopœias. In the first place, the dose of any medicine is a matter entirely within the discretion of the physician; and in the second, the doses of many medicines vary in different climates. To select a familiar example—Oriental nations use hardly any alcohol, and the Spaniards and Italians use it in the form of very light natural wines. In Great Britain and in Northern France and Germany fortified wines or distilled spirits are more in favour; while in Russia and in Scandinavia ardent spirits are almost exclusively employed, and to an extent startling to the British visitor. In India great doses of calomel are used in hepatic cases; and in malarial districts the doses of quinine are extraordinary to foreign physicians accustomed to use the drug simply as a tonic. For these reasons I am of opinion that the new pharmacopœia should not enter into the question of the doses of medicines.

I propose, on the present occasion, to consider the question from the point of view of the medical profession, and to show that either we must have an International Pharmacopœia, or that a department of the medical art of the most useful and progressive character—that is to say, experimental therapeutics—cannot be thoroughly cultivated, and for the good reason that the medical profession of Europe cannot pursue it in unison without pharmaceutical uniformity. The system of international intercommunication which has for many years past prevailed throughout the medical profession of the whole civilised world is rapidly welding the medical art into one complete and uniform whole; and the continued existence of a number of local pharmacopœias presents an anomaly and a difficulty which the civilised world will not allow to continue. Many energetic pharmaceutical chemists have endeavoured to overcome this difficulty, and I have myself seen in the splendid establishment of the late Cavaliere Sinimbeighi, in Rome, effective arrangements for the compounding of prescriptions according to almost every European method. Something of the same kind is to be found here (Brussels), in London, and, in fact, in all the principal cities of Europe; but, with these exceptions, there is incertitude, and, perhaps, risk whenever a foreign prescription is encountered. Can anyone for a moment assert that any benefit to science or to suffering humanity results from this pharmaceutical diversity? Most certainly not.

It may be asserted, however, that although this diversity of

many local pharmacopœias is a source of perplexity, it is not likely to result in danger; it will be easy, however, to prove the exact contrary. If we take as a standard of unity the quantity of opium contained in the laudanum of the British Pharmacopœia we find twice as much in the corresponding preparations of France and of Greece, and half as much in that of Portugal; and if we cross the frontier of the latter country and enter Spain, we at once meet with a laudanum of British strength. The tinctures of *nux vomica* of Germany, of Russia, and of Scandinavia are stronger than that of Great Britain, twice as strong as those of France and of Southern Europe, and three times as strong as that of the United States of America. In the preparations of iodine, of *digitalis*, of *aconite*, of prussic acid, and of many other potent remedies, we find the most serious differences; and finally, in the tincture of *cantharides* we discern a scale ranging from one part of *cantharides* to five of alcohol in Austria to one in eighty in England.

Such examples could be easily multiplied but it is unnecessary to do so in the presence of an audience so versed in the subject. Anyone who reads foreign medical literature will find himself every day confronted with the pharmacopœial difficulty. As long as you are occupied with symptoms, diagnosis, or surgical treatment you are in perfect accord with the foreign author; but when a foreign prescription is encountered the reader is like a ship without rudder or compass. He moves on amid clouds and obscurity, and is fortunate if he be not led into danger. For this reason, works of an international character seldom enter into prescriptive details. They say such and such remedies were employed, but the exact *modus agendi* is usually left to the discretion of the reader to determine according to the pharmacopœia with which he may be familiar. Many important remedies are used in their simple native condition, but even here we are baffled by the diversity of the weights and measures employed in different countries. Thirty-two grammes (an ounce) of magnesium sulphate dissolved in ninety-six grammes (three ounces) of water will produce exactly the same effect upon the Russian or upon the Turk, upon the Briton or upon the Arab; the British pharmacien, however, even in this simple prescription, is baffled by the grammes, and his foreign colleague by the ounces.

These Congresses have already indicated the general lines upon which this great work ought to be accomplished; and I believe that we ought now to address ourselves, as a Congress, to the Government of His Majesty the King of the Belgians, pointing

out the immediate necessity of general pharmaceutical uniformity in these days of international intercommunication; and that the representatives of each nation here present ought, on returning, to address their own Governments. One word more before concluding. The new pharmacopœia ought to be complete; no partial pharmacopœia of powerful remedies would prove satisfactory. A strong and combined effort will bring to a successful termination a great work, which science, common sense, and convenience alike loudly demand; and, at the beginning of the next century, the older physicians will reflect with astonishment that the civilised world tolerated the existence of a number of divergent local pharmacopœias, and their younger colleagues will understand only the *Pharmacopée Internationale*.

ART. XIV.—*Experimental Researches upon Tuberculosis and Scrofula.* By EDWIN WOOTON.

INTO the consideration of the common phenomena of Tuberculosis and Scrofula I need not enter—they are or should be known to every medical man and student.

To determine, if possible, the nature and ætiology of these diseases I, when a clinical student, made such observations as lay within the scope of my practice—not studying here a little and there a little, but selecting particular because promising cases, and following them from the earliest opportunity until the incidence of recovery or death.

The conclusions, however, at which I was enabled to arrive were unsatisfactory, because in the human subject I could submit them to no real test whether within or outside the hospital. It is true that theories could be formed, deductions made, and inductions followed, but the data were not in themselves sufficiently assured to permit of perfect reliance being placed on any course of reasoning based thereon.

Impressed with these convictions I, some time since, began the study of experimental phenomena in the brute world in relation with tuberculosis and other major diseases, and have continued it until the time of writing. It is a pursuit full of difficulties—legal, social, and scientific. The investigator is hampered by absurd anti-vivisection laws, to evade and defy which is his simple duty; and he is annoyed by the sentimentalism of weak-minded neigh-