increases, so among all sciences there is none of which the influence, and therefore the responsibility, will increase more than ours, because none more intimately concerns man's happiness and working power.

But, more clearly in the recollections of the Congress, we may be reminded that in our science there may be, or, rather, there really is, a complete community of interest among men of all nations. On all the questions before us we can differ, discuss, dispute, and stand in earnest rivalry; but all consistently with friendship, all with readiness to wait patiently till more knowledge shall decide which is in the right. Let us resolutely hold to this when we are apart: let our internationality be a clear abiding sentiment, to be, as now, declared and celebrated at appointed times, but never to be forgotten; we may, perhaps, help to gain a new honour for science, if we thus suggest that in many more things, if they were as deeply and dispassionately studied, there might be found the same complete identity of international interests as in ours.

And then, let us always remind ourselves of the nobility of our calling. I dare to claim for it, that among all the sciences, ours, in the pursuit and use of truth, offers the most complete and constant union of those three qualities which have the greatest charm for pure and active minds—novelty, utility, and charity. These three, which are sometimes in so lamentable disunion, as in the attractions of novelty without either utility or charity, are in our researches so combined that, unless by force or wilful wrong, they hardly can be put asunder. And each of them is admirable in its kind. For in every search for truth we can not only exercise curiosity, and have the delight—the really elemental happiness—of watching the unveiling of a mystery, but, on the way to truth, if we look well round us, we shall see that we are passing wonders more than the eye or mind can fully apprehend. And as one of the perfections of nature is that in all her works wonder is harmonised with utility, so is it with our science. In every truth attained there is utility either at hand or among the certainties of the future. And this utility is not selfish: it is not in any degree correlative with money-making; it may generally be estimated in the welfare of others better than in our own. Some of us may indeed make money and grow rich; but many of those that minister even to the follies and vices of mankind can make much more money than we. In all things costly and vainglorious they would far surpass us if we would compete with them. We had better not compete where wealth is the highest evidence of success; we can compete with the world in the nobler ambition of being counted among the learned and the good who strive to make the future better and happier than the past. And to this we shall attain if we will remind ourselves that, as in every pursuit of knowledge there is the charm of novelty, and in every attainment of truth utility, so in every use of it there may be charity. I do not mean only the charity which is in hospitals or in the service of the poor, great as is the privilege of our calling in that we may be its chief ministers; but that wider charity which is practised in a constant sympathy and gentleness, in patience and self-devotion. And it is surely fair to hold that, as in every search for knowledge we may strengthen our intellectual power, so in every practical employment of it we may, if we will, improve our moral nature; we may obey the whole law of Christian love, we may illustrate the highest induction of scientific philanthropy.

Let us, then, resolve to devote ourselves to the promotion of the whole science, art, and charity of medicine. Let this resolve be to us as a vow of brotherhood; and may God held us in our work.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, July 25.—M. Wurtz in the chair.—The following papers were read:—On the comet *b* of 1881, by M. Mouchez. The result of M. Oudemans' search among the Dutch Colonial Archives in South Africa is that the comet of 1881 is probably not that of 1807, but seen now for the first time.—Determination of the horizontal and lateral flexure and the flexure of the instrumental axis of the meridian circle of Bischoffsheim, by means of new apparatus, by MM. Lœwy and Perigaud.—On the equivalence of quadratic forms, by M. Jordan.—On chlorhydric ether of glycol, by M. Berthelot.—Anthracic vaccination; *résumé* of experiments made at Lambert, near Chartres, to test the method of M. Pasteur, by M. Bouley. The essence of the test consisted in inoculating vaccinated sheep with natural virus (anthracic blood from a sheep which died of the disease) instead of that prepared by processes of culture. The efficacy of the vaccination was fully demonstrated.—On the irreducible covariants of the binary quantic of the eighth order, by Prof. Sylvester.—Parabolic elements of the comet *b* 1881, by M. Bigourdan.—Observations of Schæberle's comet (*c* 1881) at Paris Observatory, by M. Bigourdan; also by MM. Henry.—Considerations on the forces of nature; inadmissibility of the hypothesis proposed by M. Faye to explain the tails of comets, by M. Picard. Whatever the nature of the repulsive force it can only be proportional to masses, not to surfaces, for *ideal* pressure on surfaces only arises from *effective* action on masses. No interposed matter can weaken or arrest its action, for the etherised medium penetrates all bodies. The action is propagated, not successively but instantaneously, being due not to an undulatory motion, but to shocks of etherised atoms and ponderable molecules, like gravitation; hence on a point in motion it is exerted in the same direction as the attraction exercised by the ponderable mass of the sun.—Remarks on the calculation of relative perturbations, according to M. Gyldén's method, by M. Callandreau.—Hemihedral crystals with inclined faces as constant sources of electricity, by MM. Jacques and Pierre Curie. A plate suitably cut in such a crystal and placed between two sheets of tin forms a condenser which becomes charged when it is compressed. The authors give an absolute measure of the quantities of electricity liberated by tourmaline and quartz for a determinate pressure. It is shown how the instrument may serve in comparison of charges and capacities.—Determination of the angular distance of colours, by M. Rosenstiehl. He shows that three colours previously referred to, viz. orange, the third yellow green, and the third blue, have the characters of a triad (that is, mixed in equal intensity, they produce the sensation of white). All the colours which occupy the angles of an inscribed equilateral triangle have the same properties.—Electric stopcock; transformation, transport, and use of energy, by M. Cabanellas.—On the heat of formation of explosives, by MM. Sarrau and Vieille. When an explosive is decomposed the heat liberated is equal (according to thermodynamics) to the excess of the heat of formation of the products over the heat of formation of the explosive. Hence, knowing, in a given case, the heat liberated by decomposition, and the composition of the products of the reaction, the heat of formation may be arrived at. The authors have applied the method to the principal explosives, and will shortly give the results.—Industry of magnesia (continued), by M. Schlœsing. He treats sewage matter with phosphate of magnesia, obtaining the phosphoric acid from natural phosphates of lime, and the magnesia from sea-water or water of salt marshes (it is precipitated by slaked lime). He produces a sort of vermicelli of lime, which gives a porous magnesia, on which the acid liquid acts easily.—On some reactions of morphine and its congeners, by M. Grimaux.—On a new process of vaccination of chicken cholera, by M. Toussaint. He inoculated fowls with blood of rabbits which had died of septicemia (or with matter cultivated from it), and the effects were those of an attenuated virus, which made the fowls refractory to cholera.—On a volcanic breccia capable of being utilised as an agricultural manure, by M. Carnot. The rock (from l'Herault) contains notable amounts of iron, lime, potash, and phosphoric acid.—Boric acid; its existence in salt lakes of the modern period, and in natural saline waters (second note), by M. Dieulafait.—On the extraordinary temperature of July, 1881, by M. Renou. It rose to 38°·4 on the 19th at the Park Observatory, a degree never experienced in Algiers, the Antilles, and Cayenne.

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