

favour of the formulæ  $H_2, Cl_2, O_2$ , or even  $Al_2Br_6$  and  $Fe_2Cl_6$ , although chemists would probably have contented themselves with  $H, Cl, O, AlBr_3$ , and  $FeCl_3$ , had it not been for the evidence of gas and vapour density, and certainly without the latter no one would have thought of  $P_4, As_4$ , or  $S_8$ .<sup>1</sup> (3) There are a number of substances in the case of which there is an apparent disagreement between the results of the two ways of determining molecular weight. Such substances are said to have an anomalous gas or vapour density. The expression anomalous vapour density is sometimes applied to the case of such substances as phosphorus and arsenic, but not very accurately. It would be better to say that these substances have an unexpected vapour density, because their complex molecular formulæ, while not clearly indicated by their chemical character, are not at variance with any established law.

We shall therefore reserve the term "anomalous vapour density" for those substances the molecular weight of which as given by their vapour density is not reconcilable with any formula which is chemically admissible. In the case of some substances, such as the oxides of chlorine, it has been shown that the discrepancy was due to errors of observation, impure specimens having been used in the experiments; but there still remain many substances having, in the sense above indicated, an anomalous vapour density. These substances have therefore been examined with special care, with the result of completely vindicating the kinetic theory, and of disclosing a very interesting and theoretically important kind of chemical change. We shall take, as instances of such anomalous vapour densities, the substances in the last division of the table, and show how the anomaly has in these cases been explained.

Sal-ammoniac has the composition represented by the formula  $NH_4Cl$ . This formula agrees with all the chemical actions of the substance and of all the substances in any way related to it, but it does not agree with the results of vapour density determinations. When sal-ammoniac is heated it is converted into vapour or gas, and this vapour or gas is reconverted into solid sal-ammoniac when it is cooled. This looks exactly like the process of sublimation, and it was universally supposed that the vapour given off when sal-ammoniac is heated was really sal-ammoniac vapour. But its vapour density corresponds, not to the formula  $NH_4Cl$  and the molecular weight 53.5, but to the half of this. Now this formula does not admit of division, and the explanation at once suggests itself, that the vapour examined was not really the vapour of sal-ammoniac, but of hydrochloric acid and ammonia gases, the products of the decomposition of sal-ammoniac.

This would of course completely explain the apparent anomaly; each molecule  $NH_4Cl$  dividing into two molecules  $NH_3$  and  $HCl$ , the gas from a given weight of sal-ammoniac would of course contain twice as many molecules and occupy twice the space which it would do if no such decomposition had occurred. On this supposition the mixed gases would remain uncombined as long as the temperature was above the decomposing point of sal-ammoniac; if the temperature fell below this point they

<sup>1</sup> It is important as a matter of scientific history to note that this agreement of gas density and chemical molecular weight was first indicated by Gay-Lussac, who showed that the ratio of the densities of two gases stood in a very simple arithmetical relation to the ratio of their chemical equivalents. Avogadro in 1811 brought forward his famous hypothesis, that the number of molecules in a given volume of gas is independent of the nature of the gas, or that the densities of gases (temperature and pressure being the same) are to one another as the masses of their molecules. This hypothesis is now shown to be in accordance with the kinetic theory of gas, and is known as "Avogadro's law." See ATOM, vol. iii, p. 40, where a slight confusion has been caused by using the word "equivalent" instead of "molecule," and by not sufficiently distinguishing between the discovery of Gay-Lussac and the hypothesis of Avogadro.

would unite and reproduce sal-ammoniac. It was necessary, however, to prove that this decomposition occurs.

As has been shown above (p. 618), the rate of diffusion of a gas depends upon its density. In this case the two gases into which the substance may be supposed to break up at the moment of volatilization differ considerably in density; we ought, therefore, to be able to effect partial separation by means of diffusion, and it has been shown that such partial separation actually does occur. Thus, if we have hydrogen gas on one side of a porous diaphragm and volatilized sal-ammoniac on the other side, we find after a time that, mixed with the hydrogen on the one side, we have what we may for shortness call sal-ammoniac vapour—that is, a vapour which when cooled forms solid sal-ammoniac—with an excess of ammonia, which, being less dense than hydrochloric acid gas, has diffused faster; while on the other side, also mixed with hydrogen which has diffused through the diaphragm, we have sal-ammoniac vapour with excess of hydrochloric acid, the denser and more slowly diffusing gas. This of course proves that the decomposition has occurred, but it does not prove that the vapour of sal-ammoniac consists entirely of hydrochloric acid and ammonia mixed with one another. That this in fact is not the case has been shown by an ingenious experiment. The two gases were separately raised to a temperature higher than that at which sal-ammoniac volatilizes, and were then allowed to mix in a vessel kept at the same temperature as the two gases. In this vessel a delicate thermometer was placed, and it was found that the mixing of the two gases was accompanied by a small but very decided evolution of heat. This proves that some chemical combination takes place, and that the mixed gases must contain some vapour of  $NH_4Cl$ . Moreover, careful determinations of the vapour density of sal-ammoniac prove that it is a little more than the mean of the densities of ammonia and hydrochloric acid (as compared with air at the same temperature and pressure, 1.01 instead of 0.9255 at 350°C.); and this increase of density on mixing the hot gases is easily explained by supposing that a small proportion is in the condition of  $NH_4Cl$ , while the most of the gas consists of separate  $NH_3$  and  $HCl$  molecules.

In a similar way it has been shown that the vapour of oil of vitriol is a mixture of two vapours,—that of water,  $H_2O$ , and that of sulphuric anhydride,  $SO_3$ ; and that sulphide of ammonium when volatilized breaks up into two volumes of ammonia and one of sulphuretted hydrogen,  $(NH_4)_2S = 2NH_3 + H_2S$ . We find, therefore, that in the former case, as in that of sal-ammoniac,  $w = 2m$ , and in the latter,  $w = 3m$ .

This peculiar kind of decomposition is now known by the name "dissociation." (See vol. v, pp. 475, 476.) In the cases we have mentioned the substances undergo nearly complete dissociation at the temperature at which they volatilize, and recombination takes place when they are cooled and again assume the solid, or, as in the case of oil of vitriol, the liquid state. These substances are therefore not suited for the illustration of the whole course of dissociation. This has been carefully studied in the case of some compounds, in which the dissociation is far from complete, at the boiling point of the substance, with the result that, if  $AB$  be the compound dissociating into the separate molecules  $A$  and  $B$ , we may represent the amount of dissociation as the ratio of the number of pairs of separate  $A$  and  $B$  molecules to the total number of pairs of  $A$  and  $B$ , both separate and combined. This ratio we may call  $R$ , so that when dissociation is complete  $R = 1$ .

(1)  $R$  increases as the temperature rises. (2)  $dR/dt$  (where  $t$  is temperature) is a maximum when  $R = \frac{1}{2}$ . (3) The presence of excess of either  $A$  or  $B$  diminishes the value of  $R$ . For instance,  $PCl_5$  is nearly completely dissociated into  $PCl_3$  and  $Cl_2$  at 300°C.; but if a large excess of  $PCl_3$  is mixed with the vapour it is found to contain scarcely any  $Cl_2$ , so that dissociation is greatly diminished by the presence of excess of  $PCl_3$ . These experimental results are capable of explanation on the kinetic theory of gas, if we adopt Pfaunder's hypothesis. This is, that for each case of dissociation there is a

limiting value for the internal kinetic energy<sup>1</sup> of a molecule of  $AB$ . If a molecule of  $AB$ , by encounters with other molecules or with the wall of the vessel containing the gas, acquires a greater amount of internal kinetic energy than this limit, it at once breaks up into  $A$  and  $B$ , so that in the gaseous mixture there are no molecules of  $AB$  having more internal kinetic energy than the limit. Further, if two molecules, one of  $A$  and one of  $B$ , meet one another with such a velocity and with such an amount of internal kinetic energy that together the internal kinetic energy is less than the limit, they will unite to form a molecule of  $AB$ . Thus the molecules with great internal kinetic energy will be separate molecules of  $A$  and  $B$ ; those with small internal kinetic energy will mostly be united as  $AB$ . This hypothesis has been to a considerable extent worked out and applied by Pfaunder and by Naumann, and the deductions from it agree fairly well with the results of experiment; but in some points the theory has not been fully developed, and in some it does not seem altogether to accord with observed facts. Some of these difficulties have been mentioned above. We know enough of the nature of dissociation to see that it belongs to the class of balanced chemical actions, in which a chemical change is reversible, and equilibrium is kept up, with constant external conditions, by the two opposite chemical changes taking place to an equal extent in a given time. We can see that all such cases are explicable by the statistical method, but we cannot apply this method mathematically until we know more of the intimate nature of the molecules and of the way in which they act upon one another. In this discussion of dissociation we have looked specially at the cases in which  $A, B$ , and  $AB$  are all gaseous, because it was the question of anomalous vapour densities which led us to treat of the subject. Dissociation also occurs where one or two of the substances are solid or liquid.

We now see with what restrictions the method of vapour density is applicable to the determination of molecular weight, and we can understand more fully the example given in the article CHEMISTRY, vol. v, p. 469. It is there shown that acetic acid vapour does not conform to the laws of Boyle and Charles until the temperature is raised to about 250°, at the ordinary barometric pressure. At and above that temperature the vapour density corresponds to the formula  $C_2H_4O_2$ . At lower temperatures the density corresponds to a higher molecular weight. Now Playfair and Wanklyn determined the vapour density at much lower temperatures than the ordinary boiling point of acetic acid, by greatly diminishing the pressure of the

acetic acid vapour. This they accomplished by mixing it with a large quantity of hydrogen, so that the pressure due to acetic acid vapour formed only a small fraction of the total pressure. The vapour density of acetic acid at the low temperatures at which they worked was found to correspond very nearly with the formula  $C_2H_4O_2$ , and, by comparing this result with what has been said (p. 620) of the chemical evidence as to the molecular weight of acetic acid, we may reasonably conclude that the molecule of acetic acid at low temperatures is  $C_2H_4O_2$ , and that as the temperature is raised it undergoes dissociation, each molecule dividing into two of  $C_2H_2O_2$ . This is then a case where  $A$  and  $B$  are equal, and  $AA$  divides into  $A + A$ . Another instance of the same kind is probably to be found in peroxide of nitrogen (CHEMISTRY, p. 513), where  $N_2O_4$  divides into  $NO_2 + NO_2$ . Similarly, sulphur vapour has, at temperatures below 500°C., a density corresponding to the formula  $S_8$ . This dissociates as the temperature rises until, about 1000°C., the density corresponds to the formula  $S_2$  (CHEMISTRY, p. 498).

We have now seen that chemistry receives great assistance in the determination of molecular weight from physics, but this assistance is almost entirely confined to the case of gases, or of substances which can be volatilized. The phenomena of the diffusion of liquids show us that there also there are independently moving particles; but the laws of liquid-diffusion have not been sufficiently generalized to give us much help in the determination of the relative masses of these particles. In liquids it is probable that the particles are very near each other, and that their shape and their mutual action, as well as their mass and the temperature, determine their rate of motion.

In solids we have no independently travelling particles, and it is perhaps scarcely correct to speak of a molecular structure of solids at all. Solids are no doubt composed of atoms, and these atoms are evidently arranged in what may be called a tactical order. When the solid is fused or dissolved or volatilized, it breaks into molecules, each repetition of the pattern, if we may use the expression, being ready to become an independent thing under favourable circumstances. But, while these potential molecules of solids cannot perhaps be properly called molecules in a physical sense,<sup>2</sup> for chemical purposes we may call them so, for they are the smallest portions of the substance which fully represent it chemically, and, as we have seen, this is the chemical molecule, the quantity which should be represented by the formula. (A. C. B.)

MOLESKIN is a stout heavy cotton fabric of leathery consistence woven as a satin twill on a strong warp. It is finished generally either as a bleached white or as a slaty drab colour, but occasionally it is printed in imitation of tweed patterns. Being an exceedingly durable and economical texture, it was formerly much more worn by workmen, especially outdoor labourers, than is now the case. It is also used for gun-cases, carriage-covers, and several purposes in which a fabric capable of resisting rough usage is desirable.

MOLESWORTH, SIR WILLIAM (1810-1855), the eighth baronet, was born in London, 23d May 1810, and succeeded to the extensive family estates in Devon and Cornwall in 1823. On the passing of the Reform Act of 1832 he was returned to parliament, though only twenty-two years old, for the eastern division of the county of Cornwall, to support the ministry of Lord Grey. For some time he took little part in the debates of the House of Commons; but in April 1835 he founded, in conjunction with Mr. Roebuck, the *London Review*, as an organ of the politicians known to the world as "Philosophic Radicals." After the publication of two volumes he purchased the *Westminster Review*, and for some time the united magazines were edited by him and J. S. Mill. From 1837 to 1841 Sir William Molesworth sat for the borough of Leeds, and during those years acquired considerable influence in the House of Commons by his speeches and by his tact in presiding over the select committee on Transportation. From 1841 to 1845 he remained in private life, occupying his leisure time in editing the works in Latin and English of Thomas Hobbes of Malmesbury, a recreation which cost him no less than £6000. In the latter year he

was returned for the borough of Southwark, and retained that seat until his death. On his return to parliament he devoted special attention to the condition of the colonies, and delivered many speeches in favour of a reduction in colonial expenditure and on their better administration. His arguments on these questions changed the opinions of the members of the House of Commons; and the criticisms of the daily press, aided by the printing of his speeches, led to the gradual acceptance of his views by the electors at large. It was not, however, until many years afterwards that he was allowed full opportunity for working out the difficult problems connected with the government of Great Britain. Office was conferred upon him in December 1852 by Lord Aberdeen, but it was the minor post of directing the public improvements and crown lands of his own country, and the chief work by which his name was brought into prominence at this time was the construction of the new Westminster Bridge. At last, in July 1855, he was called to preside over the Colonial Office, but unfortunately its duties were no sooner entrusted to his care than he was cut off by death (22d October 1855), to the universal regret of his countrymen, for he had lived down the animosities of his youth, and had attracted to himself the sympathies of all thoughtful men. The influence which his views had acquired, and still retain, may be judged from the fact that in 1878 the delegates of the Transvaal Government put forward, as the chief argument for the withdrawal of the English from the Transvaal, the substance of his speech on the abandonment of the Orange River Territory in 1854.

A full pedigree of the Molesworth family is printed in Sir John Maclean's *Trigg Minor*, vol. i.; the titles of his speeches and works

<sup>1</sup> By internal kinetic energy is meant the kinetic energy of motion of the parts of the molecule relatively to one another, in contradistinction to the kinetic energy of motion of the molecule as a whole.

<sup>2</sup> It may be urged that the cleavage of crystals indicates that they possess a molecular structure, but a tactical or pattern-like arrangement of atoms may easily be supposed to present planes of easier separation, without the assumption of really independent molecules.

may be found in the *Bibl. Cornubiensis*, vols. i. and iii. The name of Sir William Molesworth is frequently mentioned in the biographies of Mill, Cobden, Carlyle, Grote, and Panizzi.

MOLFETTA, a city and seaport of Italy, in the province of Bari, 16 miles by rail north-north-west of Bari. From the sea it presents a fine appearance with its white stone houses and the remains of its turreted walls; and there are several buildings of considerable pretensions. The castle was in the 14th century the prison of Otho, duke of Brunswick. The cathedral is dedicated to St Conrad. Molfetta has well-frequented markets, a small foreign trade (6000 tons in 1881), and such industries as cotton and net weaving, soap-boiling, and rope-spinning. The population was 26,516 in 1871.

Molfetta (Melficta or Malfitum) was given by Charles V. to the duke of Termoli in 1522, and during his lordship it was grievously sacked by the French under Lautrec. In 1631 Cesare Gonzaga took the title of duke of Guastalla and prince of Molfetta; but in 1640 the fief was sold to the Spinola family, and in 1798 incorporated with the royal domain. The bishopric holds directly of the papal see.

MOLIÈRE (1622-1673), to give Jean Baptiste Poquelin the stage name which he chose, for some undiscovered reason, to assume, was born in Paris, probably in January 1622. The baptismal certificate which is usually, and almost with absolute certainty, accepted as his is dated 15th January 1622, but it is not possible to infer that he was born on the day of his christening. The exact place of his birth is also disputed, but it seems tolerably certain that he saw the light in a house of the Rue St Honoré. His father was Jean Poquelin, an upholsterer, who, in 1631, succeeded his own uncle as "valet tapissier de chambre du roi." The family of Poquelin came from Beauvais, where for some centuries they had been prosperous tradesmen. The legend of their Scotch descent seems to have been finally disproved by the researches of M. E. Révérend du Mesnil. The mother of Molière was Marie Cressé; and on his father's side he was connected with the family of Mazuel, musicians attached to the court of France. In 1632 Molière lost his mother; his father married again in 1633. The father possessed certain shops in the covered Halle de la Foire, Saint Germain des Prés, and the biographers have imagined that Molière might have received his first bent towards the stage from the spectacles offered to the holiday people at the fair. Of his early education little is known; but it is certain that his mother possessed a Bible and Plutarch's *Lives*, books which an intelligent child would not fail to study. In spite of a persistent tradition, there is no reason to believe that the later education of Molière was neglected. "Il fit ses humanitez au Collège de Clermont," says the brief life of the comedian published by his friend and fellow-actor, La Grange, in the edition of his works printed in 1682. La Grange adds that Molière "eut l'avantage de suivre M. le Prince de Conti dans toutes ses classes." As Conti was seven years younger than Molière, it is not easy to understand how Molière came to be the school contemporary of the prince. Among more serious studies the Jesuit fathers encouraged their pupils to take part in *ballets*, and in later life Molière was a distinguished master of this sort of entertainment. According to Grimarest, the first writer who published a life of Molière in any detail (1705), he not only acquired "his humanities," but finished his "philosophy" in five years. He left the Collège de Clermont in 1641, the year when Gassendi, a great contemner of Aristotle, arrived in Paris. The *Logic* and *Ethics* of Aristotle, with his *Physics* and *Metaphysics*, were the chief philosophical text-books at the Collège de Clermont. But when he became the pupil of Gassendi (in company with Cyrano de Bergerac, Chapelle, and Hesnaut), Molière was taught to appreciate the atomic philosophy as taught by Lucretius. There seems no doubt that Molière began, and almost or

quite finished, a translation of the *De Natura Rerum*. According to a manuscript note of Trallage, published by M. Paul Lacroix, the manuscript was sold by Molière's widow to a bookseller. His philosophic studies left a deep mark on the genius of Molière. In the *Jugement de Pluton sur les deux Parties des Nouveaux Dialogues des Morts* (1684), the verdict is "que Molière ne parleroit point de Philosophie." To "talk philosophy" was a favourite exercise of his during his life, and his ideas are indicated with sufficient clearness in several of his plays. There seems no connexion between them and the opinions of "Molière le Critique" in a dialogue of that name, published in Holland in 1709. From his study of philosophy, too, he gained his knowledge of the ways of contemporary pedants,—of Panrace the Aristotelian, of Marporhus the Cartesian, of Trissotin, "qui s'attache pour l'ordre au Péripatétisme", of Philaminte, who loves Platonism, of Belise, who relishes "les petits corps," and Armande, who loves "les tourbillons." Grimarest has an amusing anecdote of a controversy in which Molière, defending Descartes, chose a lay-brother of a begging order for umpire, while Chapelle appealed to the same expert in favour of Gassendi. His college education over, Molière studied law, and there is even evidence—that of tradition in Grimarest, and of Le Boulanger de Chalussay, the libellous author of a play called *Élomire Hypochondre*—to prove that he was actually called to the bar. More trustworthy is the passing remark in La Grange's short biography (1682), "*au sortir des écoles de droit, il choisit la profession de comédien.*" Before joining a troop of half-amateur comedians, however, Molière had some experience in his father's business. In 1637 his father had obtained for him the right to succeed to his own office as "valet tapissier de chambre du roi." The document is mentioned in the inventory of Molière's effects, taken after his death. When the king travelled the valet tapissier accompanied him to arrange the furniture of the royal quarters. There is very good reason to believe (Loiseleur, *Points Obscurs*, p. 94) that Molière accompanied Louis XIII. as his valet tapissier to Provence in 1642. It is even not impossible that Molière was the young valet de chambre who concealed Cinq Mars just before his arrest at Narbonne, 13th June 1642. But this is part of the romance rather than of the history of Molière. Our next glimpse of the comedian we get in a document of 6th January 1643. Molière acknowledges the receipt of money due to him from his deceased mother's estate, and gives up his claim to succeed his father as "valet de chambre du roi." On 28th December of the same year we learn, again from documentary evidence, that Jean Baptiste Poquelin, with Joseph Bédard, Madeleine Bédard, Geneviève Bédard, and others, have hired a tennis-court, and fitted it up as a stage for dramatic performances. The company called themselves L'illustre Théâtre, *illustre* being then almost a slang word, very freely employed by the writers of the period.

We now reach a very important point in the private history of Molière, which it is necessary to discuss at some length in defence of the much maligned character of a great writer and a good man. Molière's connection with the family of Bédard brought him much unhappiness. The father of this family, Joseph Bédard the elder, was a needy man with eleven children at least. His wife's name was Marie Hervé. The most noted of his children, companions of Molière, were Joseph, Madeleine, Geneviève, and Armande. Of these, Madeleine was a woman of great talent as an actress, and Molière's friend, or perhaps mistress, through all the years of his wanderings. Now, on 14th February 1662 (for we must here leave the chronological order of events), Molière married Armande Claire Elisabeth Grésinde Bédard. His enemies at that time,

and a number of his biographers in our own day, have attempted to prove that Armande Bédard was not the sister, but the daughter of Madeleine, and even that Molière's wife may have been his own daughter by Madeleine Bédard. The arguments of M. Arsène Houssaye in support of this abominable theory are based on reckless and ignorant confusions, and do not deserve criticism. But the system of M. Loiseleur is more serious, and he goes no further than the idea that Madeleine was the mother of Armande. This, certainly, was the opinion of tradition, an opinion based on the slanders of Montfleury, a rival of Molière's, on the authority of the spiteful and anonymous author of *La Fameuse Comédienne* (1688), and on the no less libellous play, *Élomire Hypochondre*. In 1821 tradition received a shock, for Bédard then discovered Molière's "acte de mariage," in which Armande, the bride, is spoken of as the sister of Madeleine Bédard, by the same father and mother. The old scandal, or part of it, was revived by M. Fournier and M. Bazin, but received another blow in 1863. M. Soulié then discovered a legal document of 10th March 1643, in which the widow of Joseph Bédard renounced, in the name of herself and her children, his inheritance, chiefly a collection of unpaid bills. Now in this document all the children are described as minors, and among them is "*une petite non encore baptisée.*" This little girl, still not christened in March 1643, is universally recognized as the Armande Bédard afterwards married by Molière. We reach this point, then, that when Armande was an infant she was acknowledged as the sister, not as the daughter, of Madeleine Bédard. M. Loiseleur refuses, however, to accept this evidence. Madeleine, says he, had already become the mother, in 1638, of a daughter by Esprit Raymond de Moirmoron, comte de Modène, and chamberlain of Gaston duc d'Orléans, brother of Louis XIII. In 1642 Modène, who had been exiled for political reasons, "was certain to return, for Richelieu had just died, and Louis XIII. was likely to follow him." Now Madeleine was again—this is M. Loiseleur's hypothesis—about to become a mother, and if Modène returned, and learned this fact, he would not continue the *liaison*, still less would he marry her,—which, by the way, he could not do, as his wife was still alive. Madeleine, therefore, induced her mother to acknowledge the little girl as her own child. In the first place, all this is pure unsupported hypothesis. In the second place, it has always been denied that Bédard's wife could have been a mother in 1643, owing to her advanced age, probably fifty-three. But M. Loiseleur himself says that Marie Hervé was young enough to make the story "sufficiently probable." If it was probable, much more was it possible. M. Loiseleur supports his contention by pointing out that two of the other children, described as legally minors, were over twenty-five, and that their age was understated to make the account of Armande's birth more probable. Nothing is less likely than that Modène would have consulted this document to ascertain the truth about the parentage of Armande, yet M. Loiseleur's whole theory rests on that extreme improbability. It must also be observed that the date of the birth of Joseph Bédard is unknown, and he may have been, and according to M. Jal (*Dictionnaire Critique*, p. 178) must have been, a minor when he was so described in the document of 10th March 1643, while Madeleine had only passed her twenty-fifth birthday, her legal majority, by two months. This view of Joseph's age is supported by Bouquet (*Molière à Rouen*, p. 77). M. Loiseleur's only other proof is that Marie Hervé gave Armande a respectable dowry, and that, as we do not know whence the money came, it must have come from Madeleine. The tradition in Grimarest, which makes Madeleine behave *en femme furieuse*, when she heard of the marriage, is based on a juster appreciation of the

character of women. It will be admitted, probably, that the reasons for supposing that Molière espoused the daughter of a woman who had been his mistress (if she had been his mistress) are flimsy and inadequate. The affair of the dowry is insisted on by M. Livet (*La Fameuse Comédienne*, reprint of 1877, p. 143). But M. Livet explains the dowry by the hypothesis that Armande was the daughter of Madeleine and the comte de Modène, which exactly contradicts the theory of M. Loiseleur, and is itself contradicted by dates, at least as understood by M. Loiseleur. Such are the conjectures by which the foul calumnies of Molière's enemies are supported in the essays of modern French critics.

To return to the order of events, Molière passed the year 1643 in playing with, and helping to manage, the Théâtre Illustre. The company acted in various tennis-courts, with very little success. Molière was actually arrested by the tradesman who supplied candles, and the company had to borrow money from one Aubrey to release their leader from the Grand Châtelet (13th August 1645). The process of turning a tennis-court into a theatre was somewhat expensive, even though no seats were provided in the pit. The troupe was for a short time under the protection of the duc d'Orléans, but his favours were not lucrative. The duc de Guise, according to some verses printed in 1646, made Molière a present of his cast-off wardrobe. But costume was not enough to draw the public to the tennis-court theatre of the Croix Noire, and empty houses at last obliged the Théâtre Illustre to leave Paris at the end of 1646.

"Nul animal vivant n'entra dans notre salle," says the author of the scurrilous play on Molière, *Élomire Hypochondre*. But at that time some dozen travelling companies found means to exist in the provinces, and Molière determined to play among the rural towns. The career of a strolling player is much the same at all times and in all countries. The *Roman Comique* of Scarron gives a vivid picture of the adventures and misadventures, the difficulty of transport, the queer cavalcade of horses, mules, and lumbering carts that drag the wardrobe and properties, the sudden metamorphosis of the tennis-court, where the balls have just been rattling, into a stage, the quarrels with local squires, the disturbed nights in crowded country inns, all the loves and wars of a troupe on the march. Perrault tells us what the arrangements of the theatre were in Molière's early time. Tapestries were hung round the stage, and entrances and exits were made by struggling through the heavy curtains, which often knocked off the hat of the comedian, or gave a strange cock to the helmet of a warrior or a god. The lights were candles stuck in tin sconces at the back and sides, but luxury sometimes went so far that a chandelier of four candles was suspended from the roof. At intervals the candles were let down by a rope and pulley, and any one within easy reach snuffed them with his fingers. A flute and tambour, or two fiddlers, supplied the music. The highest prices were paid for seats in the *dedans* (cost of admission fivepence); for the privilege of standing up in the pit twopence-halfpenny was the charge. The doors were opened at one o'clock, the curtain rose at two.

The nominal director of the Théâtre Illustre in the provinces was Du Fresnoy; the most noted actors were Molière, the Bédards, and Du Parc, called Gros René. It is extremely difficult to follow exactly the line of march of the company. They played at Bordeaux, for example, but the date of this performance, when Molière (according to Montesquieu) failed in tragedy and was pelted, is variously given as 1644-45 (Trallage), 1647 (Loiseleur), 1648-58 (Lacroix). Perhaps the theatre prospered better elsewhere than in Paris, where the streets were barricaded in

these early days of the war of the Fronde. We find Molière at Nantes in 1648, at Fontenay-le-Compte, and in the spring of 1649 at Agen, Toulouse, and probably at Angoulême and Limoges. In January 1650 they played at Narbonne, and between 1650 and 1653 Lyons was the headquarters of the troupe. In January 1653, or perhaps 1655, Molière gave *L'Étourdi* at Lyons, the first of his finished pieces, as contrasted with the slight farces with which he generally diverted a country audience. It would be interesting to have the precise date of this piece, but La Grange (1682) says that "in 1653 Molière went to Lyons, where he gave his first comedy, *L'Étourdi*," while in his *Registre* La Grange enters the year as 1655. At Lyons De Brie and his wife, the famous Mlle. de Brie, entered the troupe, and Du Parc married marquise de Gorla, better known as Mlle. du Parc. The libellous author of *La Fameuse Comédienne* reports that Molière's heart was the shuttlecock of the beautiful Du Parc and De Brie, and the tradition has a persistent life. Molière's own opinion of the ladies and men of his company may be read between the lines of his *Impromptu de Versailles*. In 1653 Prince de Conti, after many political adventures, was residing at La Grange, near Pézénas, in Languedoc, and chance brought him into relations with his old school-fellow Molière. Conti had for first gentleman of his bed-chamber the abbé Daniel de Cosnac, whose memoirs now throw light for a moment on the fortunes of the wandering troupe. Cosnac engaged the company "of Molière and of La Béjart;" but another company, that of Cormier, nearly intercepted the favour of the prince. Thanks to the resolution of Cosnac, Molière was given one chance of appearing on the private theatre of La Grange. The excellence of his acting, the splendour of the costumes, and the insistence of Cosnac, and of Sarrasin, Conti's secretary, gained the day for Molière, and a pension was assigned to his company (Cosnac, *Mémoires*, i. 128, Paris, 1852). As Cosnac proposed to pay Molière a thousand crowns of his own money to recompense him in case he was supplanted by Cormier, it is obvious that his profession had become sufficiently lucrative. In 1654, during the session of the estates of Languedoc, Molière and his company played at Montpellier. Here Molière danced in a *ballet* (*Le Ballet des Incompatibles*) in which a number of men of rank took part, according to the fashion of the time. Molière's own rôles were those of the Poet and the Fishwife. The sport of the little piece is to introduce opposite characters, dancing and singing together. Silence dances with six women, Truth with four courtiers, Money with a poet, and so forth. Whether the ballet, or any parts of it, are by Molière, is still disputed (*La Jeunesse de Molière, suivie du Ballet des Incompatibles*, P. L. Jacob, Paris, 1858). In April 1655 it is certain that the troupe was at Lyons, where they met and hospitably entertained a profligate buffoon, Charles d'Assoucy, who informs the ages that Molière kept open house, and "une table bien garnie." November 1655 found Molière at Pézénas, where the estates of Languedoc were convened, and where local tradition points out the barber's chair in which the poet used to sit and study character. The longest of Molière's extant autographs is a receipt, dated at Pézénas, 4th February 1656, for 6000 livres, granted by the estates of Languedoc. This year was notable for the earliest representation, at Béziers, of Molière's second finished comedy, the *Dépit Amoureux*. Conti now withdrew to Paris, and began to "make his soul," as the Irish say. Almost his first act of penitence was to discard Molière's troupe (1657), which consequently found that the liberality of the estates of Languedoc was dried up for ever. Conti's relations with Molière must have definitively closed long before 1666, when the now pious prince wrote a treatise against the

stage, and especially charged his old schoolfellow with keeping a new school, a school of atheism (*Traité de la Comédie*, p. 24, Paris, 1666). Molière was now (1657) independent of princes and their favour. He went on a new circuit to Nîmes, Orange, and Avignon, where he met another old class-mate, Chapelle, and also encountered the friend of his later life, the painter Mignard. After a later stay at Lyons, ending with a piece given for the benefit of the poor on 27th February 1658, Molière passed to Grenoble, returned to Lyons, and is next found in Rouen, where, we should have said, the Théâtre Illustre had played in 1643 (F. Bouquet, *La Troupe de Molière à Rouen*, p. 90, Paris, 1880). At Rouen Molière must have made or renewed the acquaintance of Pierre and Thomas Corneille. His company had played pieces by Corneille at Lyons and elsewhere. The real business of the comedian in Rouen was to prepare his return to Paris. "After several secret journeys thither he was fortunate enough to secure the patronage of Monsieur, the king's only brother, who granted him his protection, and permitted the company to take his name, presenting them as his servants to the king and the queen-mother" (Preface to La Grange's edition of 1682). The troupe appeared for the first time before Louis XIV. in a theatre arranged in the old Louvre (24th October 1658).

Molière was now thirty-six years of age. He had gained all the experience that fifteen years of practice could give. He had seen men and cities, and noted all the humours of rural and civic France. He was at the head of a company which, as La Grange, his friend and comrade, says, "sincerely loved him." He had the un lucrative patronage of a great prince to back him, and the jealousy of all playwrights, and of the old theatres of the Hôtel de Bourgogne and the Marais, to contend against. In this struggle we can follow him by aid of the *Registre* of La Grange (a brief diary of receipts and payments), and by the help of notices in the rhymed chronicles of Loret.

The first appearance of Molière before the king was all but a failure. *Nicomède*, by the elder Corneille, was the piece, and we may believe that the actors of the Hôtel de Bourgogne, who were present, found much to criticize. When the play was over, Molière came forward and asked the king's permission to act "one of the little pieces with which he had been used to regale the provinces." The *Docteur Amoureux*, one of several slight comedies admitting of much "gag," was then performed, and "diverted as much as it surprised the audience." The king commanded that the troupe should establish itself in Paris (Preface, ed. 1682). The theatre assigned to the company was a *salle* in the Petit Bourbon, in a line with the present Rue du Louvre. Some Italian players already occupied the house on Tuesdays, Fridays, and Sundays; the company of Molière played on the other days. The first piece played in the new house (3d Nov. 1658) was *L'Étourdi*. La Grange says the comedy had a great success, producing seventy pistoles for each actor. The success is admitted even by the spiteful author of *Étomire Hypochondre* (Paris, 1670)—

"Je jouai l'Étourdi, qui fut une merveille."

The success, however, is attributed to the farcical element in the play and the acting—the cuckoo cry of Molière's detractors. The original of *L'Étourdi* is the Italian comedy (1629) *L'Inavvertito*, by Niccolò Barbieri detto Beltrame; Molière pushed rather far his right to "take his own wherever he found it." Had he written nothing more original, the contemporary critic of the *Festin de Pierre* might have said, not untruly, that he only excelled in stealing pieces from the Italians. The piece is conventional: the stock characters of the prodigal son, the impudent valet, the old father occupy the stage. But the dialogue

has amazing rapidity, and the vivacity of M. Coquelin in Mascarille still makes *L'Étourdi* a favourite on the stage, though it cannot be read with very much pleasure. The next piece, new in Paris, though not in the provinces, was the *Dépit Amoureux* (first acted at Béziers, 1656). The play was not less successful than *L'Étourdi*. It has two parts, one an Italian *imbroglio*; the other, which alone keeps the stage, is the original work of Molière, though, of course, the idea of *amantium ira* is as old as literature. "Nothing so good," says Mr. Saintsbury, "had yet been seen on the French stage, as the quarrels and reconciliations of the quartette of master, mistress, valet, and soubrette." Even the hostile Le Boulanger de Chalussay (*Étomire Hypochondre*) admits that the audience was much of this opinion—

"Et de tous les côtés chacun cria tout haut,  
'C'est la faire et jouer les pièces comme il faut.'"

The same praise was given, perhaps even more deservedly, to *Les Précieuses Ridicules* (18th November 1659). Doubts have been raised as to whether this famous piece, the first true comic satire of contemporary foibles on the French stage, was a new play. La Grange calls it *pièce nouvelle* in his *Registre*, but, as he enters it as the third *pièce nouvelle*, he may only mean that, like *L'Étourdi*, it was new to Paris. The short life of 1682, produced under La Grange's care, and probably written by Marcel the actor, says the *Précieuses* was "made" in 1659. There is another controversy as to whether the ladies of the Hôtel Rambouillet, or merely their *bourgeoises* and rustic imitators, were laughed at. Ménage, in later years at least, professed to recognize an attack on the over-refinement and affectation of the original and, in most ways, honourable *précieuses* of the Hôtel Rambouillet. But Chapelle and Bachaumont had discovered provincial *précieuses*, hyper-æsthetic literary ladies, at Montpellier before Molière's return to Paris; and Furetière, in the *Roman Bourgeois* (1666), found Paris full of middle-class *précieuses*, who had survived, or, like their modern counterparts, had thriven on ridicule. Another question is—Did Molière copy from the earlier *Précieuses* of the abbé de Pure? This charge of plagiarism is brought by Somaize, in the preface to his *Véritables Précieuses*. De Pure's work was a novel (1656), from which the Italian actors had put together an acting piece in their manner, that is, a thing of "gag," and improvised speeches. The reproach is interesting only because it proves how early Molière found enemies who, like Thomas Corneille in 1659, accused him of being skilled only in farce, or, like Somaize, charged him with literary larceny. These were the stock criticisms of Molière's opponents as long as he lived. The success of the *Précieuses Ridicules* was immense; on one famous occasion the king was a spectator, leaning against the great chair of the dying Cardinal Mazarin. The play can never cease to please while literary affectation exists, and it has a comic force of deathless energy. Yet a modern reader may spare some sympathy for the poor heroines, who do not wish, in courtship, to "begin with marriage," but prefer first to have some less formidable acquaintance with their wooers. Molière's next piece was less important, and more purely farcical, *Sganarelle; ou le Cocu Imaginaire* (28th May 1660). The public taste preferred a work of this light nature, and *Sganarelle* was played every year as long as Molière lived. The play was pirated by a man who pretended to have retained all the words in his memory. The counterfeit copy was published by Ribou, a double injury to Molière, as, once printed, any company might act the play. With his habitual good-nature, Molière not only allowed Ribou to publish later works of his, but actually lent money to that knave (Soulié, *Recherches*, p. 287).

On 11th October 1660 the Théâtre du Petit Bourbon was demolished by the superintendent of works, without

notice given to the company. The king gave Molière the Salle du Palais Royal, but the machinery of the old theatre was maliciously destroyed. Meanwhile the older companies of the Marais and the Hôtel de Bourgogne attempted to lure away Molière's troupe, but, as La Grange declares (*Registre*, p. 26), "all the actors loved their chief, who united to extraordinary genius an honourable character and charming manner, which compelled them all to protest that they would never leave him, but always share his fortunes." While the new theatre was being put in order, the company played in the houses of the great, and before the king at the Louvre. In their new house (originally built by Richelieu) Molière began to play on 20th January 1661. Molière now gratified his rivals by a failure. *Don Garcie de Navarre*, a heavy tragi-comedy, which had long lain among his papers, was first represented on 4th February 1661. Either Molière was a poor actor outside comedy, or his manner was not sufficiently "stagy," and, as he says, "demonic," for the taste of the day. His opponents were determined that he could not act in tragi-comedy, and he, in turn, burlesqued their pretentious and exaggerated manner in a later piece. In the *Précieuses* (sc. ix.) Molière had already rallied "les grands comédiens" of the Hôtel Bourgogne. "Les autres," he makes Mascarille say about his own troupe, "sont des ignorants qui récitent comme l'on parle, ils ne savent pas faire ronfler les vers." All this was likely to irritate the *grands comédiens*, and their friends, who avenged themselves on that unfortunate jealous prince, Don Garcie de Navarre. The subject of this unsuccessful drama is one of many examples which show how Molière's mind was engaged with the serious or comic aspects of jealousy, a passion which he had soon cause to know most intimately. Meantime the everyday life of the stage went on, and the doorkeeper of the Théâtre St. Germain was wounded by some revellers who tried to force their way into the house (La Grange, *Registre*). A year later, an Italian actor was stabbed in front of Molière's house, where he had sought to take shelter (Campardon, *Nouvelles Pièces*, p. 20). To these dangers actors were peculiarly subject: Molière himself was frequently threatened by the marquises and others whose class he ridiculed on the stage, and there seems even reason to believe that there is some truth in the story of the angry marquis who rubbed the poet's head against his buttons, thereby cutting his face severely. The story comes late (1725) into his biography, but is supported by a passage in the contemporary play, *Zélinde* (Paris, 1663, scene viii.). Before Easter, Molière asked for two shares in the profits of his company, one for himself, and one for his wife, if he married. That fatal step was already contemplated (La Grange). On 24th June he brought out for the first time *L'École des Maris*. The general idea of the piece is as old as Menander, and Molière was promptly accused of pilfering from the *Adelphi* of Terence. One of the *ficelles* of the comedy is borrowed from a story as old, at least, as Boccaccio, and still amusing in a novel by Charles de Bernard. It is significant of Molière's talent that the grotesque and baffled paternal wooer, Sganarelle, like several other butts in Molière's comedy, does to a certain extent win our sympathy and pity as well as our laughter. The next new piece was *Les Fâcheux*, a *comédie-ballet*, the Comedy of Bores, played before the king at Fouquet's house at Vaux le Vicomte (August 15-20, 1661). The comedians, without knowing it, were perhaps the real "fâcheux" on this occasion, for Fouquet was absorbed in the schemes of his insatiable ambition (*Quo non ascendam?* says his motto), and the king was organizing the arrest and fall of Fouquet, his rival in the affections of La Vallière. The author of the prologue to *Les Fâcheux*, Pellisson, a friend of Fouquet's, was arrested along with the superintendent of finance. Pellisson's prologue and