

## Science and the Church

The words "science" and "Church" are here understood in the following sense: Science is not taken in the restricted meaning of natural sciences, but in the general one given to the word by Aristotle and St. Thomas Aquinas. Aristotle defines science as a sure and evident knowledge obtained from demonstrations. This is identical with St. Thomas's definition of science as the knowledge of things from their causes. In this sense science comprises the entire curriculum of university studies. Church, in connexion with science, theoretically means any Church that claims authority in matters of doctrine and teaching; practically, however, only the Catholic Church is in question, on account of her universality and her claim of power to exercise this authority. The relation between the two is here treated under the two heads SCIENCE and CHURCH.

### Science

Science is considered from three points of view: contact with faith, legitimate freedom, unlimited freedom.

#### Points of contact between science and faith

These are mainly confined to philosophical and historical sciences. They do not occur in theology, as it is the very science of faith itself. The points of contact of the various sciences with faith may be grouped as follows:

#### Philosophy

In the philosophical sciences: — the existence of God and His qualities: — unity, personality, eternity infinity; God, the final end of man and of all created things; freedom of the human will, the natural law.

#### History

In the historical and linguistic sciences: the historical unity of the human race and of the original language; the history of the Patriarchs, of the Israelites, and of their Messianic belief; the history of Christ and His Church; the authenticity of the Sacred Books; the history of dogmas, of schisms, of heresies; hagiography.

#### Law

In the science of ethics and law: — the origin of right and duty (the realistic Positivism of Comte and the subjective Positivism of John Stuart Mill); the authority of civil governments (Rousseau's "Contrat social" and Kant's "Critique of Pure Reason"); the matrimonial contract, its unity and permanency; the natural rights and duties of parents and children; personal property; freedom of religion (separation of religion and state, toleration).

#### Medicine

The medical and biological sciences have occasioned serious discussion concerning the existence of the human soul, its spirituality and immortality, its difference from the vital principle in animals; the physiological unity of mankind; the justification of prevention and extinction of human life. In reality, however, all these questions lie outside the domain of medicine.

## Natural sciences

In natural sciences, especially natural philosophy, the points of contact are: — the creation of the world and of man (materialistic doctrines, eternity of matter, absolute necessity of natural laws impossibility of miracles, Darwinian origin of man); the Deluge, its existence and ethnographical universality. The mathematical and experimental sciences, also known as exact sciences, have no contact whatever with faith, although at one time, it was erroneously believed that the geocentric system was contained in the Bible. The celestial phenomena mentioned in the Scripture, like the star of the magi, the solar eclipse during the Paschal full moon, the stars falling from heaven as forerunners of the Last Judgment, are all of the miraculous kind and beyond the laws of nature.

## Legitimate freedom

Legitimate freedom is needed for science as well as for any human development. The only questions are these: what is legitimate freedom, and what are its limitations?

## Research and teaching

Science comprises two functions: research and teaching.

## Research

The object of scientific research is practically indefinite in extent and can never be exhausted by the human mind. In this field there is more freedom than has ever been claimed. Compared to its field, the progress of science appears small, so much so, that the greatest progress seems to consist in the knowledge of how little we know. This was the conclusion arrived at by Socrates, Newton, Humboldt, and so many others. The very instruments teach this lesson: the deeper the microscope descends into the secrets of nature and the higher the telescopic power reaches into the heavens, the vaster appears the ocean of undiscovered truths. This ought to be kept in mind, when the progress of science is loudly proclaimed. There has never been a general progress of all sciences; it was always progress in some branches, often at the cost of others. In our own days natural, medical, and historical sciences advance rapidly in comparison with past ages; at the same time the philosophical sciences fall just as rapidly behind the early ages. The science of law owes its foundation to the ancient world. Some of the theological sciences reached their height in the early part of the Middle Ages, others towards the beginning of the seventeenth century.

## Teaching

By teaching is here understood every diffusion of knowledge, by word or print, in school or museum, in public or private. Progress and the freedom necessary for it are as much to be desired in teaching as in research. There is a doctrinal freedom, a pedagogical freedom, and a professional freedom. Doctrinal freedom regards the doctrine itself which is taught; pedagogical freedom, the manner in which science is diffused among scholars or the general public; professional freedom, the persons who do the teaching. Science claims freedom of teaching in all these respects.

## Limitations

It has to be seen whether there are limitations to research and teaching and what these limitations are.

All things in this world may be considered from a triple point of view: from the logical, the physical, and the ethical. Applied to science we discover limitations in all three.

## Logical

Logically science is limited by truth, which belongs to its very essence. Knowledge of things cannot be had from their causes, unless the knowledge be true. False knowledge cannot be derived from the causes of things; it has its origin in some spurious source. Should science ever have to choose between truth and freedom (a choice not at all imaginary), it must under all circumstances decide for truth, under penalty of self-annihilation. As long as the case is thus put theoretically, there is no difference of opinion. Yet in practice, it is almost hopeless to reconcile conflicting sentiments. When, in 1901, a vacant chair at the University of Strasburg was to be filled by a Catholic historian, Mommsen published a protest, in which he exclaimed: "A sense of degradation is pervading German university circles". On that occasion he coined the shibboleth "voraussetzungslos", and claimed that scientific research must be "without presuppositions". The same cry was raised by Harnack (1908) when he demanded "unbounded freedom for research and knowledge". The demand was formulated a little more precisely by the congress of academicians in Jena (1908). Their claim for science was "freedom from every view foreign to scientific methods".

In the latter formula the claim has a legitimate meaning, viz., that unscientific views should not influence the results of science. In the meaning of Mommsen and Harnack, however, the claim is illogical in a double sense. First, there can be no "science without presuppositions". Every scientist must accept certain truths dictated by sound reason, among others, the truth of his own existence and of a world outside of himself; next, that he can recognize the external world through the senses, that a reasoning power is given to him for understanding the impressions received, and a will power free from physical constraint. As a philosopher, he reflects upon these truths and explains them on scientific methods, but will never prove all of them without involving himself in vicious circles. Whatever science he chooses he has to build it upon the natural or philosophical presuppositions on which his life as man rests. The fact is that every positive science borrows from philosophy a number of established principles.

So much for the general premises. They alone would show how illogical is the claim for "science without presuppositions". But this is not all. Each science has its own particular presuppositions or axioms, distinct from its own conclusions, just as every building has its foundation, distinct from its walls and roof. Nay, the various branches of any special science have all their own proper presuppositions. Euclid's geometry is built upon three kinds of presuppositions. He calls them definitions, postulates, and common notions. The latter were called axioms by Proclus. To show the difference between hypothesis and result no better example could be chosen than Euclid's fifth postulate of the first book. The postulate says: "When two straight lines are intersected by a third so as to make the inner adjacent angles on one side less than two right angles, the two lines, indefinitely prolonged, will intersect on the side of those lesser angles." By a mistake of Proclus (fifth century) the postulate was changed into a proposition. Innumerable attempts at proving the supposed proposition were made, until the error was recognized, only a century ago. The fifth postulate, or axiom of parallels as it is often called, proved to be a real hypothesis, distinct from all the other presuppositions. Non-euclidian geometries have been constructed by a simple change of the fifth postulate. All this shows that there is no geometry without presuppositions. And similarly, there is no algebra without presuppositions. Law starts from the existence of families and from their natural tendency towards association for common welfare. Medicine takes the human body as a living organism, subject to derangement, and the existence of remedies, before it constructs its science. History supposes human

testimony to be, under certain conditions, a reliable source of knowledge, before it begins its researches. Linguistic sciences, likewise, take it or granted that human languages are not constructed arbitrarily but evolved logically from a variety of circumstances. Theology takes from philosophy a number of truths, such as the existence of God, the possibility of miracles, and others. In fact, one science borrows its presuppositions from the results of other sciences, a division of labour which is necessitated by the limitations of everything human. Hence, the cry for "science without presuppositions" is doubly illogical, unless by presupposition is meant an hypothesis that can be proved to be false or foreign to the particular science in question. The freedom of science therefore has its limitations from the point of view of logic.

## Physical

From the physical point of view science requires material means. Buildings, endowments, and libraries are necessary to all branches of science, in research as well as in teaching. Medical and natural sciences require extraordinary means, such as laboratories, museums, and instruments. Material requirements have always imposed limitations upon scientific research and teaching. On the other hand, the appeals of science for freedom from the burden have been generously answered. Between the twelfth and the fourteenth centuries about forty universities were founded in Europe, partly by private initiative, partly by princes or popes, in most cases by the combined efforts of both together with the members of the university. Among the self-originating universities may be mentioned Bologna, Paris, Oxford, and Cambridge. With the help of princes, universities were erected at Palencia, Naples, Salamanca, Seville, and Siena. Of the universities founded by popes we mention only Rome, Pisa, Ferrara, Toulouse, Valladolid, Heidelberg, Cologne, and Erfurt. Most of the old universities, like Coimbra, Florence, Prague, Vienna, Cracow, Alcalá, Upsala, Louvain, Leipzig, Rostock, Tübingen, and many others, owe their origin to the combined efforts of princes and popes. The foundations consisted mainly of charters giving civil rights and authorizing scientific degrees, in most cases also of material contributions and endowments. To many of the professors' chairs, ecclesiastical benefices were applied by the popes without other obligation than that of teaching science. Naturally the founders retained a certain authority and influence over the schools. On the whole, the old universities enjoyed everywhere the same freedom which they have in England up to this day. After the Reformation the governments of continental Europe made the universities of their own territories State institutions, paying the professors as Government employees, sometimes prescribing textbooks, methods of teaching, and even doctrines. Although in the nineteenth century, governments were obliged to relax their supervision, they still keep the monopoly of establishing universities and of appointing the professors. Their influence on the progress of science is unmistakable; how far this may benefit science, need not be decided in this place. With the growing influence of the State that of the Church has been diminished, in most universities to total extinction. In the few European universities in which the faculty of Catholic theology is still allowed to exist, the supervision of the Church over her own science is almost reduced to a mere veto. The necessity of exempting the professors from the oath against the Modernistic heresy is an illustration of the case. Owing to the freedom of teaching in the United States of America there are, besides the public universities of the different states, a number of institutions founded by private endowment. In the face of the strong aid which anti-Christian and atheistic tendencies receive through the influence of universities, private endowments of schools that maintain the truth of Revelation cannot be too much recommended.

## Ethical

The limitations of science from the ethical point of view are twofold. The direct action of science on ethics is readily understood; the reaction of ethics upon science is just as certain. And both action and

reaction create limitations for science. The activity of man is guided by two spiritual faculties, understanding and will. From the understanding it derives light, from the will firmness. Naturally the understanding precedes the will and hence the influence of science upon ethics. This influence becomes an important factor in the welfare of the human race for the reason that it is not confined to the scientist in his own researches, but reaches the masses through the various forms of teaching by word and writing. If one is to judge aright in this matter, two general principles must be kept in view. First, ethics is more important for mankind than science. Those who believe in revelation, know that the Commandments are the criteria by which men will be judged (Matthew 25:35-46); and those who see only as far as the light of natural reason enables them to see, know from history that the happiness of peoples and nations consists rather in moral rectitude than in scientific progress. The conclusion is that if there should ever be a conflict between science and ethics, ethics should prevail. Now, there can be no such conflict except in two cases: when scientific research leads into error, and when the teaching of science, even if true, is applied against sound educational maxims. To see that these exceptions are not imaginary, one need only glance at the points of contact between science and faith, under A. All of them indicate actual conflicts. Unpedagogical teaching is sadly illustrated by the recent movement in Germany towards premature and even public instruction on sexual relations, which provoked a reaction on the part of the civil authorities.

So much about the direct action of science on ethics. The case ought not to be reversible, in other words, ethics should not influence science, except in the way of stimulating research and teaching. However, not only individuals but whole schools of scientists have been subject to that human frailty expressed in the adage: *Stat pro ratione voluntas*. As Cicero expresses it: "Man judges much more frequently influenced by hatred or love or cupidity . . . or some mental agitation, than by the truth, or a command, or the law" (*De oratore*, II, xlii). If Cicero is correct, then the freedom of knowledge, so highly praised and so loudly demanded, is perverted by men in a double sense. First, they carry the freedom of the will into the judgment. Love, hatred, desires, are passions or acts of the will, while judgments are formed by the understanding, a faculty entirely devoid of free choice. Secondly, they deprive the understanding of the necessary indifference and equilibrium, and force it to one side, whether the side of truth or that of falsehood. If the men of science, who clamour for freedom, belong to the class described by Cicero, then their idea of freedom is entirely confused and perverted. It may be answered that Cicero's statement applied to daily affairs rather than to the pursuits of science. This is perfectly true as far as exact sciences are concerned, and it is probably true also in regard to the formal object of every science. Yet when we consider the very first postulates that the sciences take from philosophy, we come very near to daily life. Men of science hear of Christ and know of the magna carta of His kingdom, proclaimed on the mountain (Luke 6). It cuts very sharply into daily life. It could be discarded, if that same Christ had not claimed all power in heaven and on earth, and if He had not prophesied His second coming, to judge the living and the dead.

Here it is that Cicero's love and hatred come in. It is quite safe to say: there is no place in the civilized world where Christ is not loved and hated. Those who are willing to take the steep and narrow path towards His kingdom accept the testimonies to His Divine mission with impartiality; others who prefer an easier and broader way of life try to persuade themselves that the claims of Christ are unfounded. For, besides those who either reject His claims through inherited or acquired prejudices, or treat them with indifference, a large number of men try to strengthen their anti-Christian position by scientific forms. Knowing that Christ's Divinity can be proved from the miracles to which He appealed as testimonies of His Father, they formulate the axiom: "Miracles are impossible". Seeing, however, the inconsistency of the formula as long as there is a Maker of the world, they are driven to the next postulate: "There is no Creator". Seeing again, that the existence of the Creator can be proved from the existence of the world, and convincingly so by a number of arguments, they require new axioms. First

they treat the origin of matter as too remote for its cause to be ascertained, and plead that: "Matter is eternal". For a similar reason the origin of life is explained by the arbitrary postulate of "spontaneous generation" . Then the wisdom and order displayed in the starry heavens and in the flora and fauna of the earth must be disposed of. To say in plain words "All order in the world is casual" would be offensive to common sense. The axiom is then vested in more scientific language, thus: "From eternity the world has passed through an infinite number of forms, and only the fittest was able to survive".

The substructure of anti-Christian science has still one weak point: the human soul is not from eternity and its spiritual faculties point to a spiritual maker. The fabrication of axioms, once begun, has to be concluded: "The human soul is not essentially different from the vital principle of the animal". This conclusion recommends itself as especially strong against what the will dreads: the animal is not immortal, and hence neither is the human soul; consequently whatever judgment may follow, it will have no effect. The end of the fabrication is bitter. Man is a highly developed orang-outang. There is still one stumbling-block in the Sacred Scriptures, old and new. The Old Testament narrates the creation of man, his fall, the promise of a Redeemer; it contains prophecies of a Messiah which seem to be fulfilled in Christ and His Church. The New Testament proves the fulfilment of the promises, and presents a superhuman Being, who offered His life for the expiation of sin and attested His Divinity by His own Resurrection; it gives the constitution and early history of His Church, and promises her existence to the consummation of the world. This could not be allowed to stand in the face of anti-Christian science. A few postulates more or less will do no harm to science as it stands. The Hebrew literature is put on a par with that of Persia or China, the history of Paradise is relegated to the realm of legends, the authenticity of the books is denied, contradictions in the contents are pointed out, and the obvious sense is distorted. The axioms used for the annihilation of the Sacred Scriptures have the advantage of plausibility over those used against the Creator. They are draped in a mass of erudition taken from the linguistic and the historical sciences.

But we have not seen all of them yet. The greatest obstacle to anti-Christian science is the Church, which claims Divine origin, authority to teach infallible truth, maintains the inspiration of Scripture, and is confident of her own existence to the end of the world. With her, science cannot play as with philosophy or literature. She is a living institution wielding her sceptre over all the peoples of the world. She has all the weapons of science at her disposal, and members devoted to her, heart and soul. To grant to her equal rights on scientific grounds would be disastrous to the "science without presuppositions". The mere creating of new axioms would not seem to be efficient against a living organization. The axioms have to be proclaimed loudly, and kept alive, and finally enforced by organized opposition, even in some cases by government power. Books and journals and lecture halls announce the one text, sung in every key, the great axiom: that the Church is essentially unscientific as resting on unwarranted presuppositions, and that her scientists can never be true men of science. Mommsen's cry of degradation on the appointment of a Catholic historian in Strasburg (1901) re-echoed loudly from most German universities. And yet, there was question of only a fifth Catholic among seventy-two professors; and this at a university in Alsace-Lorraine, a territory almost entirely Catholic. Similar proportions prevail in most universities. All the axioms of anti-Christian science mentioned above are entirely arbitrary and false. Not one of them can be supported by solid reasons; on the contrary, every one of them has been proved to be false. Thus anti-Christian science has surrounded itself by a number of boundary stakes driven into scientific ground, and has thus limited its own freedom of progress; the "science without presuppositions" is entangled in its own axioms, for no other reason than its aversion to Christ. On the other hand, the scientist who accepts the teaching of Christ need not fall back on a single arbitrary postulate. If he is a philosopher, he starts from the premises dictated by reason. In the world around him he recognizes the natural revelation of a Creator, and by logical deductions concludes from the contingency of things created to the Being Un-created. The same

reasoning makes him understand the spirituality and immortality of the soul. From both results combined he concludes further to moral obligations and the existence of a natural law. Thus prepared he can start into any scientific research without the necessity of erecting boundary stakes for the purpose of justifying his prejudices. If he wants to go further and put his faith upon a scientific basis, he may take the books, called the Sacred Scriptures, as a starting-point, apply methodical criticism to their authenticity, and find them just as reliable as any other historical record. Their contents, prophecies, and miracles convince him of the Divinity of Christ, and from the testimony of Christ he accepts the entire supernatural Revelation. He has constructed the science of his faith without any other than scientific premises. Thus the science of the Christian is the only one that gives freedom of research and progress; its boundaries are none but the pale of truth. Anti-Christian science, on the contrary, is the slave of its own preconceived ethics.

### Unlimited freedom

The demand for unlimited freedom in science is unreasonable and unjust, because it leads to licence and rebellion.

### Does not exist

There is no unlimited freedom in the world, and liberty over-stepping its boundaries always leads to evil. Man himself is neither absolutely free, nor would he desire unbounded freedom. Freedom is not the greatest boon nor the final end of man; it is given to him as a means to reach his end. Within his own mind, man feels bound to truth. Around himself, he sees all nature bound to laws and even dreads disturbances in their regular course. In all his activity he gets along best by remaining within the laws set for him. Those judgments are the best which are formed in accordance with the rules of logic. Those machines and instruments are the finest which are allowed the smallest amount of freedom. Social intercourse is easiest within the rules of propriety. Widening these boundaries does not lead to higher perfection. Opinions are free only where certainty cannot be reached; scientific theories are free as long as they rest on probabilities. The freest of all in their thinking are the ignorant. In short, the more freedom of opinion, the less science. Similarly, a railway train with freedom in more than one line is disastrous, a ship not under the control of the helm is doomed. A nation that depreciates its code of law, that relaxes the administration of justice, that sets aside the strict rules of propriety, that does not protect its own industry, that gives no guarantee for personal and public property and safety is on the decline. Unlimited freedom leads to barbarism, and its nearest approach is found in the wilds of Australia.

### Licence

The cry of anti-Christian science is for license. The boundaries enumerated in the preceding paragraph circumscribe the logical, the physical, and the ethical realm of man. Whenever he steps outside, he falls into error, into misfortune, into licence. Now, to which realm does science belong? Aristotle's definition fixes it in the logical realm. And what becomes of the freedom of science? Within man, the logical realm is the intellectual faculty, and without, it is the realm of truth. Yet neither is free. Man's freedom is in the will not in the understanding. Truth is eternal and absolute. It follows that the cry for unbounded freedom of science has no place in the logical realm; evidently, it is not meant for the physical; so it must belong to the ethical realm; it is not a cry for truth, it is a cry with a purpose. What the purpose is can be inferred from what has been said under II. It may be summed up in the statement that it is rebellion against both supernatural and natural revelation. The former position is the primary but could not consistently be held without the latter. Rebellion is not too strong a word. If God pleases

to reveal Himself in any way whatever, man is obliged to accept the revelation, and no arbitrary axiom will dispense him from the duty. Against natural revelation Paulsen and Wundt appeal to the postulate of "closed natural causality", meaning by "closed" the exclusion of the Creator. Supernatural revelation was styled by Kant "a dogmatic constraint", which, he says, may have an educational value for minors by filling them with pious fears. Wundt follows him by calling Catholicism the religion of constraint, and Paulsen praises Kant as "the redeemer from unbearable stress". All these expressions rest on the supposition that in science there is no place for a Creator, no place for a Redeemer. Many attempts have been made to put the axiom on a scientific basis; but it remains an assumed premise, an "unwavering conviction", as Harnack calls it.

## Consequences

That the expressions "license" and "rebellion" are just is clear from the consequences of anti-Christian science.

## Atheism

Anti-Christian science leads to Atheism. When science repudiates the claim of Christ as Son of God, it necessarily repudiates the Father who sent Him, and the Holy Ghost who proceeds from both. The logical inference does not find favour with the partisans of that science. When in 1892 the school laws were being discussed in the German Reichstag, Chancellor Caprivi had the courage to say: "The point in question is Christianity or Atheism . . . the essential in man is his relation to God." The outcry on the "liberal" side of the House showed that the chancellor had touched a sore point. Since the repudiation of the Creator is clearly an abuse of freedom and an infringement of the natural law, science has, by all means, to save appearances by scientifically sounding words. First it calls the two great divisions of spirits Monism and Dualism. German scientists have even formed the "Monists' Union" claiming that there is no real distinction between the world and God. When their system emphasizes the world it is Materialism; when it accentuates the Divinity it is Pantheism. Monism is only a gentler name for both. The plain word "atheism" seems to be too offensive. English Naturalists replaced it long ago by better-sounding words, like Deism and Agnosticism. Toland, Tindal, Bolingbroke, Shaftesbury, of the eighteenth century, took satisfaction in removing the Deity so far away from the world that he could have no influence on it. Yet "Deity" still had too religious an odour and implied a gross inconsistency. To Huxley and other scientists of the nineteenth century the well-sounding name "agnosticism" appeared more dignified. In the face of natural law, however, which binds man to know and to serve his Creator, pleading ignorance of God is as much a rebellion against Him as shutting Him out of the world.

All these and other tactful terms and phases cover the same crude Atheism and stand, without exception, confessedly; on a collection of arbitrary postulates. Dualism, on the contrary, has no need of postulates, except those dictated by common sense. Sound reason beholds in creation, as in a mirror, its Maker, and is thus able to refer natural phenomena to their ultimate cause. While science requires the knowledge of intermediate causes only, the knowledge of things by their ultimate cause raises science to its highest degree, or wisdom, as St. Thomas Aquinas calls it. This is why logical coherence and consistency are always and exclusively found in the dualistic doctrine. It is vain to hope that the abyss between the logical philosophy of Dualists and the "unwavering convictions" of Monists may be bridged over by discussions. This was well illustrated when Father Wasmann lectured in Berlin (1907) on the theory of Evolution and was opposed by Plate and ten other speakers. The result of the discussion was that each, Plate and Wasmann, put his respective views in print, the one his axioms and the other his philosophy, and that, moreover, Plate denied that Wasmann was entitled to be considered a

scientist on account of what he called Wasmann's Christian presuppositions.

## Subjectivism

After the exclusion of God, there is need of an idol; the necessity lies in human nature. All the nations of old had their idols, even the Israelites, when at times they rebelled against the Prophets. The shape of the idols varies with progress. The savages made them of wood, the civilized pagans of silver and gold, and our own reading age makes them of philosophical systems. Kant did not draw the last consequences from his "autonomy of reason"; it was done by Fichte, Schelling, and Hegel. This Idealism developed into Subjectivism in the widest sense of the word, viz., into the complete emancipation of the human mind and will from God. The idol is the human Ego. The consequences are that truth and justice lose their eternal character and become relative concepts; man changes with the ages, and with him his own creations; what he calls true and right in one century, may become false and wrong in another. In regard to truth we have the explicit statement of Paulsen, that "there is no philosophy eternally valid". Relative to justice, Hartmann defines Kant's autonomy in the following words: "It means neither more nor less than this, that in moral matters I am the highest tribunal without appeal." Religion, which forms the principal part of justice, becomes likewise a matter of subjective inclination. Harnack calls submission to the doctrine of others treason against personal religion; and Nietzsche defends his idol by calling Christianity the immortal shame of mankind. The axiom is pronounced in more dignified form by Pfleiderer (1907). "In the science of history", he says, "the appearance on earth of a superhuman being cannot be considered". Perhaps in the most general way it is formulated by Paulsen (1908): "Switching off the supernatural from the natural and historical world". Yet, all these subjective axioms are only more or less scientific forms of the plain Straussian postulate (1835): "We are no longer Christians".

## Anarchism

Here we are confronted by two facts that need earnest consideration. On the one hand, the Government universities of nearly all countries in Europe and many American universities exclude all relation to God and practically favour the atheistic postulate just mentioned; and on the other hand, these are the very postulates summed up by Pius X under the name of "modernism". Hence the general outcry of the State universities against the Encyclical "Pascendi" of 1907. To begin with the first, the licence of subjective truth is the very hotbed of anarchistic theories and the rebellion against the teaching of Christ will end with the moral conditions of Greek and Roman paganism. As we are not concerned here with the relation between science and the State, it must suffice to show how the alarm is beginning to sound. It seems to be a matter of course, and yet it sounds unusual, when Count Apponyi as minister of education and worship in Hungary, on the occasion of an academic promotion, recommends to teachers of science a moral and earnest conscientiousness. More remarkable is the warning of Virchow at the meeting of scientists at Munich (1877) against teaching personal views and speculations as established truths, and in particular, against replacing the dogmas of the Church by a religion of evolution.

The moral state of a youth growing up under such teaching could be anticipated in general from the history of paganism. It was reserved to our anti-Christian age, however, to justify immorality with an appearance of science. The assertion has been made and circulated in journals and meetings, that a pure and moral life is detrimental from the point of view of medicine. The medical faculty of the University of Christiania found it necessary to declare the assertion entirely false, and to state positively that "we know of no harm or weakness owing to chastity". The same protest was expressed by Dr. Raoult in the words: "There is no such thing as pathology of continency"; and by Dr. Vidal (see below) in the statement, that the commandments of God are legitimate from the standpoint of medicine, and that their

observance is not only possible but advantageous. Warnings like these may be called forth by anticipated effects; but we hear others that prove the effects already existing. Such was the unanimous vote of the International Conference for the protection of Health and Morals held at Brussels (September, 1902): "Young men have to be taught that the virtues of chastity and continency are not only not hurtful but most commendable from a purely medical and hygienic point of view". The effects in educational institutions must have been appalling before scientific authorities dared to lift the veil by public warnings. They were given by Dr. Fleury (1899) in regard to French colleges, and were repeated by Dr. Fournier (1905) and Dr. Francotte (1907). Even louder are the warnings of Paulsen, Förster, and especially Obermedicinalrat Dr. Gruber regarding the German gymnasia and universities. Dr. Desplats (see bibliography) insists that in order to stay the current which is carrying the French along towards irremediable decadence, it is necessary to react against the doctrinal and practical neo-paganism. No wonder that the licentious doctrines have found their way from books into journals and passed from the educated to the illiterate. Sosnosky, a literary authority, compares the present moral epidemic to that of pagan Rome and of the French Revolution, and protests, from a merely natural point of view, against the hypocrisy of covering crude animalism with the cloak of art and science (see Allgemeine Zeitung, No. 3, 21 January, 1911).

What the State either will not or dare not do, the Church does always, by keeping men mindful of the object or end of their existence and this last end is not science. The catechism points it out under three heads: the knowledge of God; the observance of His commandments; and the use of His grace. Knowledge of nature is intended by God as a subordinate means to this end. And for that very reason there can never be a conflict between science and our final destiny. The Church does not teach natural sciences, but she helps to make their principles tributary to wisdom, first by warning against error and then by pointing to the ultimate cause of all things. When science raises the cry against the guiding office of the Church, it is comparable to a system of navigation without any directions outside the ship itself and the surrounding waves. The formal object of each particular science is certainly different from faith just as the steering of a vessel is different from the knowledge of the stars; but the exclusion of all guiding lights beyond the billows of scientific opinions and hypotheses is entirely arbitrary, unwise, and disastrous.

## The Church

The Church in her relation to science may be better understood by a division of the subject into the following parts: Opposite views; distinction between the teaching body and the ecclesia discens; the holders of the teaching office; science of faith; pretended conflicts.

### Opposite views

#### Leo XIII

On the relation of the Church to science there are two irreconcilable views:

Leo XIII in his Apostolic Letter of 22 January, 1899, calls attention to the dangers imminent at the present time to the minds of Catholics, and specifies them as a confusion between licence and freedom, as a passion for saying and reviling whatever one pleases, as a habit of thinking or printing without restraint. The shadows cast by these dangers on men's minds, he says, are so deep as to make the exercise of the teaching office of the Apostolic See more necessary now than ever. The pope strengthens his words by the authority of the Vatican Council, which claims Divine faith for all things proposed by the Church, whether in solemn decision or by the ordinary universal magisterium.

## Virchow

Not so those outside the Church. To them spiritual restriction of thinking, speaking, writing is a remnant of the times when science was in fetters, a relic of the Dark Ages. Virchow, in discussing the appointment of professors of Protestant theology at Bonn and Marburg by the Prussian Government, made the following declaration in the Chamber (6 March, 1896): "If it is considered incumbent upon the theological faculties to preserve and to interpret a certain deposit of so-called Divine and revealed truths, then they do not fit into the framework of universities, they are in opposition to the scientific machinery prevailing there. The Reformers of the sixteenth century", he continued, "are today replaced by free scientific criticism; consistently, instead of halting before the theological faculties, they should have abolished them, and the troubles ever arising from a certain class of men who claim to be holders of Divine truth, would have vanished" (reported by Hertling, see below, p. 49 sq.). Such is the general voice of those who stand outside of any creed. There are others who wish to adhere to certain articles of faith established either by a congress of Reformers, or by a sovereign, or by Parliament. Although widely differing among themselves as to the inspired Books, the Divinity of Christ, and even the existence of Revelation, they all agree in considering the papacy a usurpation, and Catholic obedience in matters of faith and morals spiritual darkness and slavery.

## History

These conflicting views have existed from the very cradle of Christianity, and will last to the end of the world. St. Ambrose (397) speaking of the wise of the world (*sapientes mundi*) says: "Deviating from faith, they are implicated in the darkness of perpetual blindness, although they have the day of Christ and the light of the Church before them; while seeing nothing, they open their mouth as if they knew everything, keen for vain things and dull for things eternal (*Hexaameron*, V, xxiv, 86, in P.L., XIV, 240). Those who accept the teaching of Christ have always formed the smaller portion of mankind, and the mass of the small flock is not composed of the rich or the mighty or the wise of the world. They maintain that the Church is a Divine institution, endowed with the triple power of priesthood, teaching, and government; hence their submission, firmness, and union in matters of faith all over the world. Those who stand aloof and see in the Church nothing but a human institution, like the old Roman Empire for instance, may be consistent in condemning the Catholic position; at the same time they cannot help seeing even greater consistency in the Catholic point of view. To submit one's understanding to a doctrine supposed to be Divine and guaranteed to be infallible is undoubtedly more consistent than to accept prevailing postulates of science, or national doctrines, or a passing public opinion. Catholics must be permitted to interpret in their own favour what the Scripture says about the light of faith, the darkness of error, and the liberty of truth.

## The teaching body and the *ecclesia discens*

The teaching and hearing bodies of Christ's Church are technically called "*ecclesia docens*" and "*ecclesia discens*".

## Distinction

The distinction between the teaching body of the Church and the body of hearers was made by its Founder in the command: "Going therefore, teach ye all nations" (Matthew 28:19); "he that heareth you, heareth me" (Luke 10:16). The same division is illustrated by St. Paul in the comparison between the human body and the mystical body of Christ: "If the whole body were the eye, where would be the

hearing?" (1 Corinthians 12:17). The office of teaching was communicated to the Church together with the dignity of priesthood and the authority of government. The triple power rests in St. Peter and the Apostles and their legal successors. The Divine office of teaching is not to impart scientific conviction, it is to give authoritative declaration, and the response to it, on the part of the hearers, is not science but faith. The Church may even use her ruling power to support her teaching. All this is exemplified in the early Christian centuries. The Twelve Apostles were not conversant with the schools of Athens, of Alexandria, or of Rome. St. Paul, who was called later, was probably the only scholar among them; and even he professes that his preaching was not in the persuasive words of human wisdom (1 Corinthians 2:4). He used his power against Hymeneus and Alexander, who had made shipwreck concerning the faith (1 Timothy 1:20), and exhorted Timothy to use the same authority against those who would not endure sound doctrine (2 Timothy 4:3). The Apostle St. John blamed several bishops of Minor Asia for not removing false teachers (Revelation 2:14-20).

### Premises of faith

The partition of the Church in two bodies, one teaching and one hearing, does not exclude science from the latter, any more than it necessarily includes it in the former. The assent of faith is a rational act; before it can be made, it must be known for certain that there is a God, that God has spoken, and what He has spoken. The Apostles, the early Fathers, councils, and popes bear witness to it (Pesch, see below, pp. 18-22). St. Peter wants the faithful to be ready always to satisfy every one that asketh a reason of that hope which is in them (1 Peter 3:15). St. Augustine asks: "Who does not see that knowledge precedes faith? Nobody believes unless he knows what to believe". The following is the declaration of the Vatican Council (Sess. III, de fide, cap. 3): "To render the service of our faith reasonable, God has joined to the interior actions of the Holy Ghost exterior proofs of His revelation: Divine facts, miracles especially and prophecies, which are speaking witnesses of His infinite power and wisdom, unfailing testimonies of Divine revelation and adapted to the understanding of every one". Innocent XI explicitly condemned the opinion that mere probability in the knowledge of revelation is sufficient for the supernatural assent of faith. Pius IX demands that human reason should inquire conscientiously into the facts of Divine revelation, to make sure that God has spoken, in order to render Him, according to the Apostle, a reasonable service.

In the knowledge of the premises of faith, man has to progress with age and education. The child cannot give supernatural assent of faith to what parents or teachers say, until its mind is sufficiently developed to be sure of the existence and contents of Divine revelation. Again, the knowledge that may suffice for a child will not do for a man. He must apply his mental faculties and interest himself in the foundations of his faith. The prudence of his mind should equal the simplicity of his will. Prof. Heis used to have the catechism on his desk beside the scientific books. Progress of knowledge is especially commendable in parents, teachers, students, above all in professors of theological science and in ecclesiastical dignitaries. Under their scientific methods the premises of faith have become a special branch of theology, called apologetics.

### Contents of faith

The contents of faith should be penetrated as far as mental faculties and Divine grace allow. Revelation points out the eternal destiny, shows the way, and gives the means; it warns against eternal loss, helps in temptation, and shields from evil. Without knowledge there is no interest, and the consequence is forgetfulness of the main purpose of life. Hence the duty of all men to listen to God, to meditate on His words, and to understand them in a way. The highest acts of mercy and charity are teaching the ignorant and correcting the erring. The study of revealed truth and the propagation by word and writing

of the knowledge thus acquired was practised in the Church at all times and by all classes. Owing to this study the Divine deposit of faith has grown into a scientific system which, in clearness and firmness of structure, is not equalled by other branches of knowledge. From the frame of that system stand out in bold relief the deep mysteries, beyond human comprehension, indeed, but well defined in meaning and safe against objections. It must be remembered, though, that divines and doctors, as such, do not constitute the teaching body of the Church; they all belong to the "Ecclesia discens". Theology as a scientific system, with propositions, arguments, and objections, is not the direct object of the "Ecclesia docens". She leaves it to specialists, with all manner of encouragement and direction.

### Dangers against faith

The dangers against faith. — Since faith, as the foundation of eternal life, is a supernatural virtue, it is exposed to temptation like all other virtues. Some difficulties are inherent in the deposit of faith, others arise from outside. A revealed truth may appear contrary to the mind as unintelligible, like the mysteries, or repugnant to the will as entailing unwelcome precepts. Temptations from outside may be the constant hostility of the world towards the Church, discrimination against Catholics, falsification of history, anti-Christian and infidel literature, scandals within, and defections from, the Church.

From her positive and exclusive right to teach all nations whatsoever Christ has commanded the Apostles (Matthew 28:19-20), the Church necessarily derives also the right of defence. To protect her flock against dangers of faith she calls in the full authority of her ruling power with its subdivisions of legislation, judiciary, and administration. By this power she regulates the appointment and removal of religious teachers, the admission or prohibition of religious doctrines, and even methods of teaching, in word or writing.

### The holders of the teaching office

#### Infallible magisterium

These are the pope and the bishops, as successors to St. Peter and the Apostles. The promise of Divine assistance was given together with the command of teaching; it rests, therefore, in the same subjects, but is restricted to official, to the exclusion of private, acts regarding the deposit of faith.

The official activity of teaching may be exercised either in the ordinary, or daily, magisterium, or by occasional solemn decisions. The former goes on uninterruptedly; the latter are called forth in times of great danger, especially of growing heresies. The promise of Divine assistance provides for the integrity of doctrine "all days, even to the consummation of the world" (Matthew 28:20). From the nature of the case it follows that individual bishops may fall into error, because ample provision is made when the entire teaching body of the Church and the supreme pastor in particular are protected by Providence. The "Ecclesia docens", as a whole, can never fall into error in matters of faith or morals, whether her teaching be the ordinary or the solemn; nor can the pope proclaim false doctrines in his capacity of supreme pastor of the universal Church. Without this prerogative, which is known by the name of Infallibility, the Divine promise of assistance would be a fallacy. To the right of teaching on the part of the "Ecclesia docens" naturally corresponds the obligation of hearing on the part of the "Ecclesia discens". Hearing is meant in the sense of submitting the understanding, and it is of a double nature, according as the teaching is, or is not, done under the guarantee of infallibility. The former submission is called assent of faith, the latter assent of religious obedience.

### Other tribunals

Submission of the understanding to other than Divine authority may appear objectionable, but is practised, in science as well as in daily life, in hundreds of ways. With regard to the Church submission of the understanding is especially appropriate, no matter whether she speaks with infallible or with administrative authority, in other words whether the submission is one of faith or one of obedience. Even from a human point of view her authority is exceptionally high and impartial. To the teaching that rests directly on the ruling authority only, without the prerogative of infallibility, belong the pastoral letters of bishops, particular diocesan catechisms, decrees of provincial synods, the decisions of Roman Congregations, and many official acts of the pope, even such as are obligatory on the universal Church. In each diocese the official authority in matters of faith and morals is the bishop. Without his (or higher) consent no professor of theology, no catechist, no preacher can exercise his official function, and no publication that touches upon matters of faith and morals is permitted within the diocese. The approbation of teachers is known as canonical mission, while the approval or refusal of books is called censorship. Above the diocesan tribunals stand the Roman Congregations to which certain matters are reserved and to which appeal can be made. Science, in particular, may come in contact with the Congregation of Rites, which examines miracles proposed in support of beatifications and canonizations. More frequently it is the Congregation of the Index, which officially examines and decides upon the danger, to faith and morals, of books (not persons) denounced or under suspicion, and the Holy Office of the Inquisition, which decides questions of orthodoxy, with the pope himself as prefect. All the ecclesiastical authorities, mentioned in this paragraph, participate, either officially or by delegation, in the legislative, judicial, and executive powers of the Church, in support of their functions. It goes without saying that their decisions become endowed with the prerogative of infallibility, when the pope approves them, not in an ordinary manner as, for instance, when he acts as prefect of a Congregation, but solemnly, or *ex cathedra*, with the obligation of acceptance by the whole Church.

## Galilei

To men of science the Roman tribunals of the Index and the Inquisition are best known in connexion with the name of Galilei. Here seems to be the place to speak about the attitude of non-Catholic scientists towards the case. It can be shown that it is not always in keeping with the principles of science, from a triple point of view.

(a) The error involved in the condemnation of Galilei is used as an argument against the right of the tribunals to exist. This is illogical and partial. The error was purely accidental, just as the miscarriages of justice in criminal courts is often the unfortunate result of similar accidental errors. If the argument does not hold in the latter case, it holds much less in the former. The error was a universal opinion tenaciously defended by the Reformers of the sixteenth century. Besides, it is about the only seriously erroneous decision of its kind among the hundreds that issued from the Roman tribunals in the course of centuries.

(b) What is objected to in the Galilei case is not so much the historical fact of the blunder, as the permanent claim of the Church to be, by Divine right, the guardian of the Scripture; it is the principle by which she adheres to the literal sense of Holy Writ, as long as either the context or the nature of the case does not suggest a metaphorical interpretation. Granted that the evidences, which convinced Copernicus, Kepler, and Galilei, should also have convinced the theologians of the time, the latter committed a blunder. It cannot be this, however, that is continually held up against the Church. Official blunders of the highest tribunals are easily and constantly pardoned, when they are committed in the exercise of an acknowledged right. Nobody condemns the administration of justice when a disputed

case, in its course of appeals, is reversed two or three times, although each reversal puts a juridical blunder on record. Hence, what is condemned in the case of Galilei, must be the right itself, viz., the claim and the principle before mentioned. Evidently, however, they are in no way peculiar to the case of Galilei; they are as old as the Church; they have been applied in our own days, e.g. in the Syllabus of Pius IX (1864), in the Vatican Council (1870) and recently in the Encyclical "Pascendi" of Pius X (1907); and they will be applied in all the future. To attack the claim of the Church as guardian of the Scripture, there is no apparent need for going back again and again to the old Galilei incident. Nor is the legal procedure against Galilei in any way peculiar to his case. The historian judges it by the established laws of the seventeenth century and finds it unusually mild. What is it then that prevents the Galilei controversy from resting? It is hard to see any other motive in the agitation but the reluctance to admit the Church's claim to be the interpreter of the Scriptures.

(c) The vast Galilei literature shows a remarkable difference in the opposite points of view. Among Catholics little importance is attached to the case, simply because Catholics knew before and after, that the Roman Congregations are liable to error, and only wonder that not more mistakes are recorded in history. Among the others the sympathy shown for Galilei is not easily intelligible from a scientific point of view. The whole process was an entirely internal affair of the Church: Galilei appeared before his own legal superiors; for a time he was disobedient, but in the end submitted to his condemnation. The character which he displayed in the affair does not seem to call for the admiration paid to him. What then makes outsiders so sympathetic towards Galilei, if not his disobedience to the command of 1616? It would seem so, judging from the praises given to his "immortal" dialogues.

#### The science of faith

Although faith is not science, yet there is a science of faith. The knowledge acquired by faith, on the one hand, rests upon science, and on the other lends itself to scientific methods.

#### Parallel case

Faith is in many ways a parallel case to history. Although historical knowledge is not directly scientific, yet there is a science of history. Scientific inquiries precede historical knowledge, and the results of historical research are treated on scientific methods. All we know from history we know upon the authority of testimony. It belongs to the science of history to search into the existence and trustworthiness of the sources and into the unfalsified transmission of their testimony to us. Nor is that all. The science of history will arrange the chain of discovered facts, not chronologically only, but with a view of causality. It will explain the why and the how in the rise and the downfall of men, of cities, of nations.

#### Theology

The science of faith is theology. — Human testimony is here replaced by Divine authority. The premises of faith have been elaborated into a scientific system called apologetics. The Divinely revealed truths have been studied on historical, philosophical, and linguistic lines; they have been analyzed, defined, and classified; theoretical consequences have been drawn and applications to church discipline made; boundary lines between faith and science have been drawn and points of contact established; methodical objections and solutions have been applied; and attacks from outside logically refuted. The results of all these studies are embodied in a number of scientific branches, like the Biblical sciences, with their subdivisions of historical criticism, theoretical hermeneutics, and practical exegesis; then dogmatic and moral theology, with their consequences in canon law and sub-branches of

pastoral theology, homiletics, liturgies; again church history and its branches, — patrology, history of dogmas, archæology, art-history. The men who represent these sciences are the Greek and Latin Fathers and the Doctors of the Church, among them the founders of Scholastic theology, not to mention more recent celebrities among the regular and secular clergy. A vast literature may be found in Migne's edition of the Fathers and in Hurter's "Nomenclator". The widest field is here open for research eminently scientific. If science is knowledge of things from their causes, theology is the highest grade of science, since it traces its knowledge to the ultimate cause of all things. Science of this kind is what St. Thomas defines as wisdom.

## Progress

Let it not be said that there is no progress in the science of faith. Dogmatic theology may appear as the most rigid of its branches, and even there we find, with time, deeper understanding, preciser definitions, stronger proofs, better classifications, profounder knowledge of dogmas in their mutual relation and history. Canon law has not only kept abreast with, but has gone ahead of, civil law, above all in its scientific foundations. Progress in the Biblical, historical, and pastoral disciplines is so apparent as to need only a passing mention. The answer to the question, whether there should be no progress of religion in the Church of Christ, goes as far back as the fifth century and was given by St. Vincent of Lérins in the following words: "Certainly let there be progress, and as much as may be . . . but so that it be really progress in the faith, not an alteration of it." About alterations he gives the following explanation: "It is the peculiarity of progress for a thing to be developed in itself; and the peculiarity of change, for a thing to be altered from what it was into something else" (Commonitorium, 1,23; see P.L., L). The same difference between evolution and change was established by the Vatican Council: "If any one shall say that it is possible that, with the progress of science, a sense may ever be given to the doctrines proposed by the Church, other than that which the Church has understood and understands, let him be anathema" (Sess. III, can. iv, de fide et ratione, 1, can. 3). Science that is changed is not developed but abandoned, and so it is with faith. True development is shown in the parable of the mustard seed which grows into a tree, without destroying the organic connexion between the root and the smallest branches.

## Objections

The scientific character of theology has been called in question on the following grounds:

### Mysteries

Mysteries are said to be foreign to human science, for a double reason: they rest exclusively on Divine revelation, a source foreign to science; and then, they cannot be subjected to scientific methods. The objection has some appearance in its favour. Mysteries, properly so called, are truths which are essentially beyond the natural powers of any created intellect, and could never be known except by supernatural revelation. Yet the objection is only apparent. As far as the source of knowledge is concerned, science should be so eager for truth as to welcome it, no matter where it comes from. It should esteem the source of knowledge the higher the more certainty it gives. Science is bound to accept Divine Revelation as its source; why should Divine Revelation be excluded from its domain? Natural sciences may confine themselves to the former, but the latter is in no way foreign to the historical and philosophical sciences, least of all to theology. The assertion that mysteries are beyond scientific research is too general. First, their existence can be proved scientifically; secondly, they can be analysed and compared with other scientific concepts; finally, they yield scientific consequences not otherwise accessible. If the objection had any real force, it would apply similarly to mysteries

improperly so called, i.e., to natural truths that we shall never know in this life. Every science is full of them, and they are the very reason why the most learned scientists consider themselves the most ignorant. The sources of their knowledge seem to be closed forever, and scientific methods fail to open them. If this be an objection to the scientific character of a branch, then let history, law, medicine, physics, and chemistry be cancelled from the list of sciences.

### Methodical doubt

Scientific research is said to be impossible, when a proposition cannot be called in question, being bound up by the consensus of the Fathers and Doctors and the vigilant authority of the Church. A simple distinction between interior and methodical doubt will remove the difficulty. Methodical doubt is so much applied in theology that it may be said to be essential to Scholastic methods. And it is quite sufficient for impartial research. This is proved to evidence by the notorious fact that all the scientific proofs we now have for the Copernican system, without exception, have been furnished by men who could never entertain any interior doubt of its truth. The Catholic divine sees in the traditional doctrine of the Church a guiding light that leads him with great security through the fundamental questions of his science, where human reason alone is apt to lose itself in a labyrinth of inventions, surmises, hypotheses. Other difficulties touching upon science in general are mentioned in the next section.

### Conflicts

The conflicts between science and the Church are not real. They all rest on assertions like these: Faith is an obstacle to research; faith is contrary to the dignity of science; faith is discredited by history. Basing the answers on the principles explained above, we can dispel the phantoms in the following manner.

### Faith no obstacle

A believer, it is stated, can never be a scientist; his mind is bound by authority, and in case of a conflict he has to contradict science.

(a) The assertion is consistent on the supposition, that faith is a human invention. The believer, however, bases faith on Divine Revelation, and science on Creation. Both have their common source in God, the Eternal Truth. The principal points of contact between the two are enumerated above in section A (I), and only there can there be question of conflicts. It is shown in the same place (II) that every one of the pretended conflicts, without exception, rests on arbitrary axioms. As far as scientific facts are concerned, the believer rests assured that, so far, none of them has ever been in contradiction with an infallible definition. In case of an apparent difference between faith and science, he takes the following logical position: When a religious view is contradicted by a well-established scientific fact, then the sources of revelation have to be re-examined, and they will be found to leave the question open. When a clearly-defined dogma contradicts a scientific assertion, the latter has to be revised, and it will be found premature. When both contradicting assertions, the religious and the scientific, are nothing more than prevailing theories, research will be stimulated in both directions, until one of the theories appears unfounded. The conflict about the heliocentric system belonged, theoretically speaking, to the first case, and Darwinism, in its gross form, to the second; practically, however, disputed questions generally turn up in the third case, and so it was actually with the heliocentric system at the time of Copernicus, Kepler, and Galilei.

(b) It is true, the believer is less free in his knowledge than the unbeliever, but only because he knows

more. The unbeliever has one source of knowledge, the believer has two. Instead of barring his mind against the supernatural stream of knowledge by arbitrary postulates, man ought to be grateful to his Creator for every bit of knowledge, and, panting for truth, drink from both streams that pour down from heaven. Hence it is, that a well-instructed Christian child knows more of the important truths than did Kant, Herbert Spencer, or Huxley. Believing scientists do not wish to be free-thinkers just as respectable people do not want to be vagabonds.

### Dignity of science

Blind acceptance of dogmas and submission to non-scientific authority is said to be contrary to the dignity of science; hence the conflict between the Church and science. The answer is as follows:

(a) The dignity of science consists in searching for and finding truth. What injures the dignity of science is error, sham theories, arbitrary postulates. None of these qualifications is found in faith. Infallible truth is guaranteed, and the assent is based on premises which are not blindly accepted but proved by reason, on the most scientific methods if desired. Unworthy of science are premises like the following: "Error can be removed only by science and scientific truth" (Lipps, 1908); or "The only authority is science" (Masaryk). Unworthy of science, again, is the inconsistency in not yielding to premises once reasonably established. No scientist hesitates to accept results furnished by branches other than his own or even from scientists within his own special line. Yet, many shrink from accepting faith, though the existence of revelation is as reasonably established as any historical fact.

(b) When it comes to authority outside of science, the believing scientist knows that the authority to which he gives the assent of faith is Divine. The motive of his faith is not the Church, it is God. In God he sees the highest logical truth (infinite Wisdom), the highest ontological truth (the infinite Being), the highest moral truth (infinite Veracity). Bowing to such authority, infinitely beyond human science, is so much in harmony with sound reason, that science ought to be the first to say: "Ecce ancilla Domini". The dignity of science is indeed overshadowed by the dignity of faith, yet by no means degraded.

(c) More difficulty is perhaps found in the assent of religious obedience than in the assent of faith. Here it is not an infallible authority which science is asked to respect, but one that may err, like any human tribunal, even the highest. The phrase "dignity of science" means practically the dignity of man in his qualification as a scientist. Now, we put before him an alternative: If he is a member of the Catholic Church, submission to lawful authority, which he knows is established by Christ, is not only not undignified but honourable to him in all cases, because he considers obedience a higher boon than science. His case is parallel to that of the law-abiding citizen in regard to the supreme court of justice. The citizen may appeal from lower tribunals to the highest, but should not revolt against the latter. If convinced that injustice has been done him, he will prefer the common good of peaceful order to private interests, and feel the more dignified for it as a citizen. But if the scientist stands outside the Catholic Church, he most probably feels quite unconcerned about her authority in regard to himself. He might then as well let the Church take care of her own internal affairs.

In general, all scientists may consider the remark made by the bishops of the Province of Westminster in their joint pastoral letter of 1901 (see below): "It has been a fashion to decry the Roman Congregations by persons who have little or no knowledge of their careful and elaborate methods, of their system of sifting and testing evidence, and of the pains taken by the Holy See to summon experts, even from distant parts of the Church, to take part in their proceedings". As regards the Congregation of the Index in particular, its purpose is to shield the community from intellectual and moral poison. The prohibition of erroneous and dangerous publications is imposed by natural law upon the authorities of

the family, of civil and religious communities; and science ought to be the first in the rank of co-operators. Only then would its real dignity shine forth. The Catholic scientist sees furthermore a positive law in the exercise of this power, as derived from the Divine office of teaching all nations. And he sees this right made use of from the very beginning of the Church, although the Congregation of the Index was not founded until 1570, and the first Roman Index had appeared only in 1559. Before the art of printing was invented, it sufficed to burn a few manuscript copies to prevent the spreading of a doctrine. So it was done at Ephesus in the presence of St. Paul (Acts 19:19). It is known that the other Apostles, the Fathers of the Church, and the Council of Nice (325) exercised the same authority. The enumeration of the various censures, prohibitions, and indexes issued by cities, universities, bishops, provincial councils, and popes, through the Christian centuries, may be seen in Hilgers, "Der Index der Verbotenen Bücher" (Freiburg, 1904), 3-15.

The necessity of restricting the licence of all manner of publications may be illustrated by the following facts. As regards heretical books one might suppose men like St. Francis of Sales and Balme's proof against all danger. Yet, the former thanked God for having preserved him from reading infidel books and from losing his faith. The latter confessed that he could not read a forbidden book without feeling the necessity of regaining the proper tune of mind by recurring to the Scripture, the "Imitation of Christ", and Louis of Granada. As to immoral productions of literature, the flood has now become so enormous and the criminal results are so alarming, that leagues for public morality are being formed, composed of men and women, comprising all the conservative elements and all religious denominations. Political and social dangers are not less to be feared than moral infection. For that reason there is hardly any country in the world where some censorship has not been exercised. The measures taken in England, in the Netherlands, Scandinavia, France, Switzerland, and Germany may be found in Hilgers, *op. cit.*, 206-389. To say that all these measures of self-defence on the part of parents, of the State, and of the Church are against the dignity of science would be a very bold assertion.

### Historical testimony

Those who maintain that faith is discredited by history are the very ones that discredit history by falsifications. It must suffice in this place to allude to some principal points.

(a) If a believer cannot be a scientist, as is maintained, then all the great scientists must be unbelievers. In spite of its boldness the assertion is made, in order to save the appearance of consistency. The fact is, however, that up to the French Revolution, when Voltaire and Rousseau drew the last consequences from Atheism, the great scientists, almost to a man, speak with great reverence of God and of His wonderful Creation. Is it necessary to mention Copernicus, Kepler, Galilei, Tycho Brahe, Newton, Huyghens, Boyle, Haller, Mariotte, the Bernoullis, Euler, Linné, and many others? Since it is often the advocates of the glorious principles of 1789 that never tire of recounting the tragedy of Galilei, we beg to remind them of the great chemist Lavoisier, who died faithful to his Church under the guillotine, while the free-thinkers raised the cry: "Nous n'avons plus besoin de chimistes" [see "Etudes", cxxiii (Paris, 1910), 834 sqq.]. For the time after the French Revolution we find in Kneller's volume (see below) the names of a glorious array of believing scientists, taken only from the branch of natural sciences. According to Donat ("Die Freiheit der Wissenschaft", Innsbruck, 1910, p. 251) among the 8847 scientists enumerated in Poggendorff's "Biographisch-Literarisches Handwörterbuch" (Leipzig, 1863) there are no less than 862 Catholic clergymen, or nearly ten per cent of the number.

(b) The lack of true arguments for the theses "that faith is discredited by history" is supplied by falsification. Among the fables invented for the purpose may be mentioned the condemnation of the doctrine about the Antipodes. Its (probable) representative, Virgilius, was accused in Rome (747) but

not condemned (Hefele, "Konziliengeschichte", III, 557). He became Bishop of Salzburg, and was afterwards canonized by Gregory IX. Another story is the alleged prohibition by Boniface VIII of the anatomy of the human body. Columbus is reported as excommunicated by the "Council" of Salamanca. The recent re-appearance of Halley's comet has revived the story of a papal Bull issued against the comet by Calixtus III (1456). The fable was started by Laplace, who invented the "conjunction", though he tried to tone for his untruthfulness by omitting the phrase in the fourth edition of his "Essai philosophique" (see LAPLACE). The atheist Arago changed the conjunction into excommunication. Vice-Admiral Smyth added the exorcism, Robert Grant the anathema, Flammarion the "maléfice", and finally John Draper the malediction. Here the vocabulary came to an end. Poetry, gross and fine, sarcasm, and even astronomical errors were resorted to, to illustrate the conflict between science and the Church. Babinet describes the Friar Minors, during the Battle of Belgrade, crucifix in hand, exorcising a comet which was not there; Halley's comet had disappeared more than a week before. Chambers (1861) honoured Callistus III with the title "the silly pope" for commemorating annually the victory of Belgrade. Daru lets the pope stand at the foot of the altar, with tears in his eyes and his forehead covered with ashes, and bids him look up and see how the comet continues its course unconcerned about conjurations. John Draper lets the pope scare the comet away by noisy bells after the fashion of savages. Dr. Dickson White composes a papal litany: "From the Turk and the comet, good Lord, deliver us", which was supplemented by another writer: "Lord save us from the Devil, the Turk and the Comet". In "Popular Astronomy" (1908) the comet is left more than a week too long on the visible sky and in the "Rivista di Astronomia" (1909) even a full month too long; in "The Scientific American" (1909) it appears fully three years too soon. Such fictions and falsifications are needed to prove conflicts between Science and the Church (see quotations and rectifications in Stein, "Calixte III et la comète de Halley", Rome, 1909; BARTOLOMEO PLATINA).

(c) As a specimen of the anti-Catholic literature on this subject we may take the "History of the Conflicts between Religion and Science" of John W. Draper (see below), which deserves special mention, not for the difficulty it presents, but for its wide circulation in various languages. The author placed himself exclusively on philosophical and historical grounds. Neither of them formed the field of his special studies, and the many blunders in his work might be pardoned, if it were not for the boldness of style and the shallowness of its contents. As the book is on the Index, a short specimen may be welcome to those who are not allowed to read it. In connexion with the subject of the preceding paragraph, Draper writes: "When Halley's comet came in 1456, so tremendous was its apparition that it was necessary for the pope himself to interfere. He exorcised and expelled it from the skies. It shrank away into the abysses of space, terror-stricken by the maledictions of Callixtus III, and did not venture back for seventy-five years! . . . By order of the pope, all the church bells in Europe were rung to scare it away, the faithful were commanded to add each day another prayer; and as their prayers had often in so marked a manner been answered in eclipses and droughts and rains, so on this occasion it was declared that a victory over the comet had been vouchsafed to the Pope". Except the first half sentence, that the "comet came in 1456", all his statements, without exception, are historical falsifications. The scurrility of language, however, makes one think that the author did not expect to be taken seriously. The same manner of treatment is given to other historical points, like Giordano Bruno, de Dominis, the Library of Alexandria. How the Spanish Inquisition comes into the book is easily understood from its purpose; but how it comes under the title, "Conflicts between Religion and Science", remains a logical problem. The domination of the Church in the Middle Ages and its influence upon the progress of science is a subject that required a different mind from that of a chemist or physicist. It was taken up by one of the Bollandists, Ch. de Smedt, in answer to Draper. It was an easy but, at the same time, disgusting task for him to correct Draper in this, as in all other historical points (de Smedt, see below). Draper's philosophical reasonings on the scientific freedom of believing scientists, on the right of the Church in proclaiming dogmas and demanding assent, on the possibility of miracles, betray complete

ignorance or confusion of the principles explained in the preceding paragraphs.

## Vatican Council

A fitting conclusion to the chapter of "Conflicts between Science and the Church" may be found in the declaration of the Vatican Council (Sess. III, de fide, c. 4): "Faith and reason are of mutual help to each other: by reason, well applied, the foundations of faith are established, and, in the light of faith, the science of Divinity is built up. Faith, on the other hand frees and preserves reason from error and enriches it with knowledge. The Church, therefore, far from hindering the pursuit of arts and sciences, fosters and promotes them in many ways. . . . Nor does she prevent sciences, each in its sphere, from making use of their own principles and methods. Yet, while acknowledging the freedom due to them, she tries to preserve them from falling into errors contrary to Divine doctrine, and from overstepping their own boundaries and throwing into confusion matters that belong to the domain of faith. The doctrine of faith which God has revealed is not placed before the human mind for further elaboration, like a philosophical system; it is a Divine deposit, handed over to the Spouse of Christ, to be faithfully guarded and infallibly declared. Hence, the meaning once given to a sacred dogma by holy mother Church is to be maintained forever and not to be departed from under pretext of more profound understanding. Let knowledge, science and wisdom grow with the course of times and centuries, in individuals as well as in the community, in each man as in the whole Church, but in the proper manner, i.e., in the same dogma, in the same meaning, in the same understanding".

What was pronounced in the Decree of the Vatican Council was represented by a master's hand on a wall of the Vatican, three centuries ago. In his fresco (wrongly) called "Disputa", Raphael has assigned to arts and sciences their proper place in the kingdom of God. They are grouped around the altar, accept the Gospel from angels' hands, raise their eyes to the Redeemer, and from Him to the Father and the Spirit, surrounded by the Church triumphant, their own ultimate end.