

PHYSICS, PHILOSOPHY, TRANSUBSTANTIATION, THEOLOGY

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SINCE frequent mention will be made in this study of a plurality of substances, it is not without point to recall that the New Testament accounts of the Last Supper locate the Eucharist in this precise context. St. Matthew (26:26) thus reports the event: "Cenantibus autem eis, accepit Iesus panem et benedixit ac fregit (ἐκλασεν) deditque discipulis suis et ait: Accipite et comedite: hoc est corpus meum." St. Mark (14:22): "... et manducantibus illis accepit Iesus panem et benedicens fregit (ἐκλασεν) et dedit eis et ait: Sumite, hoc est corpus meum." St. Luke (22:19): "... et accepto pane gratias egit et fregit (ἐκλασεν) et dedit eis dicens: Hoc est corpus meum, quod pro vobis datur; hoc facite in meam commemorationem." And St. Paul (I Cor. 11:23-25): "Ego enim accepi a Domino quod et tradidi vobis, quoniam Dominus Iesus in qua nocte tradebatur accepit panem et gratias agens fregit (ἐκλασεν) et dixit: Accipite et manducate: hoc est corpus meum, quod pro vobis tradetur; hoc facite in meam commemorationem."¹ It appears then that at the Last Supper there were (1) one formula of consecration, (2) a plural set of bread fragments as simultaneous subjects of the formula of consecration, (3) a correspondingly plural set of simultaneous transubstantiations, and (4) a similar plural set of simultaneous multiple instances of Eucharistic presence which matched in a one-to-one correspondence the plural set of consecrated species.

Since, moreover, competent and traditional theological guidance through the intricate mazes of the problems under discussion is both necessary and welcome, it will be profitable to recall some decisive issues and replies that occur in the *Summa Theologica* of St. Thomas. The objection, for example, is lodged against the traditional doctrine that

... Videtur quod, facta consecratione, remaneat in hoc sacramento forma substantialis panis. Dictum est enim quod, facta consecratione, remaneant accidentia.

¹ Augustinus Merk, S.I., *Novum Testamentum Graece et Latine* (5th ed.; Roma: Pontificium Institutum Biblicum, 1944).

Sed cum panis sit quoddam artificiale, etiam forma eius est accidens. Ergo remanet, facta consecratione.²

Although accurately aware of the superseded scientific context in which the above objection is posed, yet one may without anachronism note that the core of the difficulty is phrased and understood in precisely the same way in which a newer science will speak in later centuries. A more precise formulation of the contemporary problem could not be desired. Because of its medieval and contemporary significance the reply of St. Thomas to this objection will be unusually important.

Ad primum ergo dicendum, quod nihil prohibet arte fieri aliquid, cuius forma non est accidens, sed forma substantialis; sicut arte possunt produci ranae et serpentes; talem enim formam non producit ars virtute propria, sed virtute naturalium principiorum. Et hoc modo producit [ars] formam substantialem panis, virtute ignis decoquentis materiam ex farina et aqua confectam.

One may clearly distinguish in this reply four distinct points: (1) the principle upon which it relies, (2) the precise juncture at which the principle is applied, (3) the general scientific context in which the issue is met, and (4) the tonal quality of the answer as an attempted explanation. The principle (1) that art and technical skill can function merely as a dispositive cause, is completely distinct from the validity of its application in the specific instance of (2). One may therefore agree with (1) and controvert (2). Altogether immaterial in this answer are the principles and alleged facts of physical and biological science (3) on which it so confidently relies. What is important and instructive in this solution is (4) the ideal which St. Thomas entertained concerning the degree of perspicuous clarity and lucidity that is congenial to those peripheral areas of philosophic intelligence that surround the opaque core of the impenetrable mystery of the Eucharist. Nothing could be more simple than the present formula of solution, nothing more neat, nothing more definitive. There are no blurred edges, no fuzzy contours, no clouded regions. The solution presumes to settle actual problems and to raise none. The transparent elegance of this solution seems to bestow on every later inquirer the theological right to hope, to ambition, and to endeavor to achieve a solution equally clear in a context intricately more complicated. May one not take it

² *Sum. Theol.*, III, q. 75, a. 6, obj. 1.

as incontrovertible that the honest, humble hope to attain as clean and neat a solution as St. Thomas considered himself to possess, does not *eo ipso* render sober theological inquiry suspect and dangerous?

Somewhat later Thomas undertakes to put and to solve an objection concerning the possible plurality of multiple instances of Eucharistic presence with respect to one and the same consecrated host. The difficulty is:

Videtur quod non sit totus Christus sub qualibet parte specierum panis vel vini. Species enim illae dividi possunt in infinitum. Si ergo Christus totus est sub qualibet parte specierum praedictarum, sequeretur quod infinities esset in hoc sacramento, quod est inconveniens: nam infinitum repugnat non solum naturae, sed etiam gratiae.³

To which without doubt or hesitation, with a firm hand and assured confidence, Thomas sketches in the *corpus* of the article the basic principles of his reply:

. . . Manifestum est autem quod natura substantiae est sub qualibet parte dimensionum, sub quibus continetur; sicut sub qualibet parte aeris est tota natura aeris, et sub qualibet parte panis est tota natura panis; et hoc indifferenter, sive sint dimensiones actu divisae (sicut cum aer dividitur, vel panis secatur), vel etiam sint actu indivisae. Et ideo manifestum est quod totus Christus est sub qualibet parte specierum panis, etiam hostia integra manente, et non solum cum frangitur.

The latter part of the above passage is most important. With firm insight and superb confidence in his basic principle: *substantia tota est sub qualibet parte dimensionum*, Thomas courageously confronts both situations: (1) *hostia integra*, (2) *hostia fracta*. The fullest relevance, however, of this principle emerges more clearly in his response to the above objection:

Ad primum ergo dicendum quod numerus sequitur divisionem et ideo quamdiu quantitas materiae manet indivisa actu, neque substantia alicuius rei est pluries sub dimensionibus propriis, neque Corpus Christi sub dimensionibus panis, et per consequens neque infinities, sed toties in quot partes dividitur.

It would seem then, in sum, that Thomas equips an inquirer with three aids: (1) the assurance that clarity of solution is not *eo ipso* unorthodox or embarrassing, (2) substance exists whole and entirely within any and all random cross-sections of the dimensions within the limits of

³ *Sum. Theol.*, III, q. 76, a. 3, obj. 1.

which it is enclosed, and (3) that numerical multiplicity is a function of division, either artificially or naturally induced, whereby plurality is generated.

A clear answer therefore to the problems in hand may not thereby be rendered suspect or unorthodox. But any and all answers, clear or cloudy, must be orthodox in the fullest sense of the word. It is essential therefore to recall the bedrock decisions and decrees of the thirteenth session of the Council of Trent. The *caput tertium* declares: "... Totus enim et integer Christus sub panis specie, et sub quavis ipsius speciei parte, totus item sub vini specie, et sub eius partibus existit."⁴ One will note that there is no mention therein of the Thomistic distinction between parts before separation and parts after separation. In the corresponding Canon 3, however, one reads: "Si quis negaverit, in venerabili Sacramento Eucharistiae sub unaquaque specie, sub singulis cuiusque speciei partibus, separatione facta, totum Christum contineri, anathema sit,"⁵ wherein the distinction is given explicit expression. Thus far, then, the character of dogmatic formulation concerning Christ's integral Eucharistic presence.

With regard to the unique and miraculous mode of sacramental conversion the Council of Trent declares:

... per consecrationem panis et vini conversionem fieri totius substantiae panis in substantiam corporis Christi Domini nostri, et totius substantiae vini in substantiam sanguinis Eius. Quae conversio convenienter et proprie a sancta Catholica Ecclesia transsubstantiatio est appellata.⁶

To which certain other significant details are appended in the companion Canon 2:

Si quis dixerit in sacrosancto Eucharistiae sacramento remanere substantiam panis et vini una cum Corpore et Sanguine Domini nostri Iesu Christi, negaveritque mirabilem illam et singularem conversionem totius substantiae panis in Corpus et totius substantiae vini in Sanguinem, manentibus dumtaxat speciebus panis et vini, quam quidem conversionem Catholica Ecclesia aptissime transsubstantiationem appellat: anathema sit.⁷

Such then are the main pillars that support the framework of scriptural text, theological tradition, and conciliar definition in which the present problems are to be raised and the solutions attempted in the modern and contemporary period.

⁴ DB, 876.

⁵ DB, 885.

⁶ DB, 877.

⁷ DB, 884.

To this period Tongiorgi⁸ and Palmieri⁹ belong only by right of chronology. For their precipitous and hence pseudo-scientific temper, inadequate factual grounds, and bland confidence in speculative insights unsupported by certified evidence, distinguish them sharply and significantly from those who subsequently faced similar problems but on altogether different grounds.¹⁰

The more recent issues which engage our attention open innocently enough in 1928, when Marc de Munnynck, O. P., contributed a rather vigorous and defensive article to the *Divus Thomas*. In the course of his analytical deduction of matter and form in the physical universe the author has occasion to distinguish between quantity and extension, and notes:

This distinction between quantity and extension appears to be disconcerting to certain types of mind, despite the fact that any abstract number is capable of disclosing this difference; 40,000 is without doubt a quantity which is devoid of all extension, except perhaps what dimensions imagination may suggest. It is perfectly obvious that the two ideas which we have placed side by side: "plurality of parts" and "mutual exteriority of parts" are not identical concepts. The only obvious distinction between them is a distinction of reason. Is there however a real distinction in nature, corresponding to it? As a philosopher, we are not disposed to affirm or deny such a correspondence in fact. The only decisive criterion which natural human intelligence possesses for deciding in favor of the real distinction is opposition: contradictory, contrary, or relative; none of which a comparison between quantity and extension appears to disclose. This lack of evidence does not warrant a denial of the real distinction, but neither does it justify an affirmation of it. It is obvious however that theologians have at their disposal other resources which equip them to decide the issue.¹¹

For our purposes the author's philosophy of quantity is irrelevant. What is of importance and became significant later is the open confession of philosophic diffidence *vis-à-vis* the exaltation of theological resources for a definitive solution.

⁸ S. Tongiorgi, S.I., *Institutiones Philosophicae*, II (8th ed.; Bruxelles: H. Goemaere, 1862), 315-6.

⁹ D. Palmieri, S.I., *Institutiones Philosophicae*, II (Roma: Typographia della Pace, 1875), 182-6.

¹⁰ For further information concerning these points in Tongiorgi and Palmieri see G. Filograssi, S.J., "La realtà oggettiva delle specie eucaristiche secondo il Cardinal Franzelin," *Gregorianum*, XVIII (1937), 395-409.

¹¹ Marc de Munnynck, O.P., "L'Hylémorphisme dans la pensée contemporaine," *Divus Thomas* (Freiburg), VI (1928), 164.

Somewhat later similar sentiments reappear in the Eucharistic context. For we read:

In this area also theologians have a unique advantage over mere philosophers. What is the factor that endures throughout Eucharistic transubstantiation? Is it the prime matter of the bread which becomes the prime matter of the body of Jesus Christ? I am not aware that such a stupid question ever presented itself to a normal intelligence. And yet it is indeed the substance of the bread which becomes the substance of the victimized body of Jesus. Where then is the element that is common to both poles of the change? As Cajetan very aptly remarks, transubstantiation is that conversion which brings it to pass that the bread becomes the body of Christ without any need whatever to search for some factor that endures throughout the process of conversion.¹²

As above with regard to the preceding passage, the present content is contextually irrelevant, but the tone is significant and important. Under the official care at the time of tradesmen philosophers who did not always realize the valid relations between philosophic analysis and scientific discovery, hylomorphism was doomed to eke out scrawny days on a mere subsistence diet of digestible facts. And as a natural result, mildly envious eyes were wont to gaze on the transcendental security of dogmatic theologians whom the swirl and whirl of scientific storms could not disturb nor dethrone.

When Father de Munnynck's article was being published, a young and vigorous philosopher was preparing for the press a college manual of introduction to philosophy.¹³ The chapter of most importance to this history is entitled, "Alte und moderner Hylomorphismus" (pp. 80-101). No one can at all understand or appreciate the sequel to this story who does not take the time to study in some detail the attempted transformation of tradition which was taking place under Mitterer's gifted and trenchant pen. In excellent manual style the matter is presented under six headings (pp. 96-97):

Then: A body is a natural unit (*unum naturale*), not an artificial combination (*unum artificiale*), or any such comparable resultant.

Now: No one would doubt this fact, not even in the case of those bodies which are synthesized in the laboratory or in a chemical processing plant. For what really occurs in such instances of chemical combination, for example, is not a technical manufacture of the compounds in question, but only such a controlled direction of

¹² *Ibid.*, p. 166.

¹³ Albert Mitterer, *Einführung in der Philosophie* (Bressanone: A. Weger, 1929).

natural processes that the elements must enter into combination according to laws of nature.

Mitterer gives throughout his treatment every evidence of a broad and competent acquaintance with the facts of current physics and chemistry. And there was in those difficult days for hylomorphism some small comfort in thus seeing the *vetera* and the *nova* so neatly and smoothly coordinated—at first.

For in accordance with his program of direct confrontation Mitterer continues:

Then: A body is a natural unit which is intrinsically integrated into a single whole (*unum per se*), in such a way that the natural bond [*das natürliche Band*] which links together the constituent parts of a body and keeps them interlocked, is not composed of forces that reside outside the basic parts, but is in fact the mutual orientation of such parts to each other in accordance with laws of nature.

Now: Also true today. And as a matter of fact, these constituent parts [*Bestandteile*] are not only what are classified as intrinsic causes (*causae intrinsecae*), namely: material and formal causes (*causa materialis, formalis*); but the basic element [*Urstoff*] is precisely the efficient cause [*Wirkursache*] of the existential unity of the parts and of the essence of this existential unity, namely the essential structure [*Wesensstruktur*].

But it is apparent that here substance in its traditional conception and *unum per se* in all its incomparable integrity dissolve into a dynamical configuration of particle elements that evade the ontological commitments of essence without relinquishing the honors of nature. Again Mitterer says:

Then: A body is a physical unit, essentially integrated into a single whole (*unum per essentiam*). For it is a unit by reason of its fundamental physical parts [*Grundbestandteile, Wesensbestandteile*], and not by reason of any other internal property of a body. As the natural result of their reciprocal orientations toward each other in combination, it is the essence of these fundamental constituent parts to construct such a unit constellation, or body, and it is the essence of a body to be such a unitary pattern.

Now: Also true today. Essential structure is a necessary resultant of the basic units of energy, associated with the initial material of the universe, and it is the essence of such basic particles to utilize these minimal units of energy and to engineer by their means these structural patterns.

The picture, sketched by Mitterer, has now become more clear but more terrifying. For “fundamental particles” and “constituent parts”

are assumed to be synonymous and interchangeable. In the place of a union achieved by a bipolar and transcendental relationship between matter and form, Mitterer substitutes an electromagnetic saturation and equilibrium of a particle constellation system. The resolution of integral substance into a discrete pattern is nearly completed and is thus far completely revolutionary.

All that now remains is to continue the process and to capture within the snares of semantical confusion the related concepts of essence, substance, nature (p. 97):

Then: A body is thus a single essence (*essentia*), that is, only as a totality [*als Ganzes*] does it serve as the real ground of its own existence and of its essential type (*unum principium essendi*).

Now: Certainly true, as has been shown above.

Then: A body is a single substance (*substantia*), that is, only as a totality [*als Ganzes*] does it function in two roles: (1) as subsistent and not inherent in another (*subsistens, non inherens*), (2) as the vehicle [*Träger*] for its specific qualitative and quantitative characteristics (*unum principium subsistendi*).

Now: Certainly.

Then: A body is a single nature (*natura*), that is, only as a totality [*als Ganzes*] does it function as the subject [*Träger*] and the cause (*causa*) of its specific actions and reactions (*unum principium operandi*).

Now: Of course. And here one thinks, for example, of the specifically different spectra, characteristic of the different chemical elements.

The transformation of traditional substance by Mitterer is now complete. It remains but a caricature of its former self: "For every body is an energy-system" (p. 97). This profound alteration of substance both in fact and in meaning, and the spectacular contemporary advances in knowledge of the physico-chemical structure of molar masses, now stand ready to plague with perplexing ambiguities all subsequent discussions by the *fides quaerens intellectum* concerning the mystery of transubstantiation.

In 1932 Jacques Maritain published his epochal book, *Distinguer pour unir*,¹⁴ in which were laid down the broad lines of a constructive approach to the growing, critical situation of tension between modern physics and the traditional philosophy of nature. Exploiting nuances latent in the Scholastic heritage, Maritain attempted to disengage two distinct but complementary sciences that rendered altogether irreduci-

¹⁴ Jacques Maritain, *Distinguer pour unir* (Paris: Desclée de Brouwer et Cie, 1932).

ble but indispensably supplementary descriptions of the same spatio-temporal phenomena in the world of physical experience. Here for the first time since Galileo there was a favorable opportunity for order, synthesis, and harmony in which the physical facts of atomic structure could be reconciled in individual intelligence with metaphysical insights into substance.

But before there was time for Maritain's pregnant thought to deliver a viable solution to these problems, Hans Meyer with vast erudition, firm hand, and a trenchant pen at his disposal, completed and published in 1934 his *Die Wissenschaftslehre des Thomas von Aquin*. His judgment is heavy, harsh, and apparently final:

The distinction between two ways of studying nature: (1) a philosophy of nature which investigates the genuinely essential grounds of natural processes, and (2) a physics of nature which is concerned with the description of proximate causes—a distinction which some ascribe to Thomas—is foreign to the outlook of Aquinas.¹⁵

At this truly critical juncture in the modern history of Scholastic philosophy, when a united front was essential to the cooperative effort that was needed to develop and apply the resources of Maritain's irenic solution, the forces of philosophy were divided into two hostile camps and thus dissipated each other's strength.

Innocently enough, perhaps, but with disastrous results, Father Bernhardin Krempel, Passionist, encouraged by de Munnynck's essay of 1928, undertook to publish in the *Divus Thomas* an article of contemporary pertinence. Krempel writes:

Before we proceed to propose the answer to this question, let us remember that—at least in their fundamental tenets—both hylomorphism and modern electron theory stand on firm grounds. It would be foolish to belittle modern atomic theory as if it were a bare hypothesis . . . On the other hand no Catholic thinker will toss hylomorphism overboard without difficulty. Let us prescind for the moment from the decree of the Vienna Council (1312) and of the Fifth Lateran Council, the full implications of which are controverted. But hylomorphism is clearly and expressly taught in the famous 24 Theses which were issued on July 27, 1914, by the Papal Commission on Studies, as "basic truths" of Thomistic philosophy. Benedict XV personally entertained an especially high esteem for these propositions, and on March 7, 1916, prescribed them for all ecclesiastical faculties. And hylomorphism is

¹⁵ Hans Meyer, *Die Wissenschaftslehre des Thomas von Aquin* (Fulda: Actiendruckerei, 1934), p. 62.

beyond all shadow of doubt one of those basic truths (*principia*) of St. Thomas' teaching which Canon 1366, §2 obliges Catholic professors to present.¹⁶

In those difficult days of a besieged hylomorphism this detailed attempt to protect its flanks with papal armor and to discourage future assaults under the mailed threat of ecclesiastical censure could not go unnoticed and unchallenged. And especially since the same author later suggests:

If anyone is inclined to doubt that the essential constituents of even a corporeal substance are beyond the reach of sense observation, let him just reflect for a moment on the most holy Sacrament of the altar. After the whole substance [*Wesen*—or should we say substances—of the bread, and consequently the substantial form(s) and prime matter have been changed into the body of Christ, the same phenomenal characteristics (*accidentia*) impinge on the senses as before the change. So much so, that, had we a research instrument with magnification power enough, we could still see in a consecrated host the electrons revolving about atomic nuclei. And yet we know with the certainty of faith that their essences are no longer there. To the natural scientist, however, a consecrated host can serve as well as an unconsecrated one for purposes of experimental investigation.¹⁷

But surely, if hylomorphic theory does possess any ontological validity and philosophic explanatory power, it is not to be tested by the altogether unique and exceptional instance of Eucharistic transubstantiation. This is distinctly a privileged case and hence a prejudiced item for confirmation or for rebuttal of conventional views.

Once more before closing his inquiry Krempel alludes to the Eucharist as a favorable instance:

... for the research scientist iron, nitrogen, etc., both within and without the human organism, are not notably different. But they are no longer iron and nitrogen. I have only to reflect on the most holy Sacrament of the altar where the fact is as certain as faith. To the research scientist who still shrugs his shoulders as a gesture of persistent scepticism, we make this reply: you base your judgment on the electromagnetic phenomenal appearances. They are indeed the same. But by virtue of our philosophical point of view we penetrate to the essences of things. We consider the totality of sensible appearances. And there is in this regard so profound a transformation that we are forced to recognize a different inner causal constitution, a different essential structure.¹⁸

¹⁶ Bernhardin Krempel, "Widerstreitet die Elektronenlehre dem Hylomorphismus?", *Divus Thomas* (Freiburg), XIII (1935), 219–20.

¹⁷ *Ibid.*, p. 221.

¹⁸ *Ibid.*, p. 223.

There can, I submit, be no doubt that Krempel does actually pretend to support his case for hylomorphism, particularly at its most criticised junctures, by significant allusion to the Eucharistic instance of transubstantiation and presence.

Mitterer accordingly arose to protest in the midst of other business,¹⁹ and made his presence felt in three distinct quarters. His first article appeared in the *Theologische Quartalschrift*.²⁰ In a second article he reads de Munnynck and Krempel a sharp lesson in philosophic good manners and subtly coaxes professional theologians to join him in the public repudiation of such philosophical parasites. For the benefit of the philosophers he retorts:

. . . In the name of metaphysics no stone must be left unturned in order to preserve hylomorphism, which must be abandoned as a physical theory, as a metaphysical system Everybody refuses to subject metaphysics to the role of handmaid to physics, namely modern physics. But no one is aware that thus they degrade metaphysics to the role of handmaid to ancient physics.²¹

Even if this reproach were richly deserved by those at whom it is levelled, some of its sting is mitigated by Mitterer's inclusion within it of his pet thesis that hylomorphism was originally proposed and must accordingly be currently maintained, not as a metaphysical, but as a physical interpretation of experience on the same level as an atomic explanation of physical structure. As such a physical theory, Mitterer maintains that it is dead. But not yet buried. And Mitterer plans a dignified funeral:

. . . No one will deny that the hylomorphic interpretation of physical bodies, whether as a physical theory or as a metaphysical system, is above all other considerations an item in the domain of purely natural knowledge. No one will deny that this theory in the domain of purely natural knowledge was once employed with advantage by contemporary theology and that it rendered significant services. . . .²²

¹⁹ In 1935 Mitterer published, as a development of the germ ideas contained in his *Einführung: Das Ringen der alten Stoff-Form-Metaphysik mit der heutigen Stoff-Physik* (Innsbruck: Tyrolia Verlag). In 1936 appeared his second volume in the same series: *Wesensartwandel und Artensystem der physikalischen Körperwelt* (Bressanone: A. Weger).

²⁰ Albert Mitterer, "Glaubensungefährlichkeit und Wahrheit des physikalischen Hylomorphismus," *Theologische Quartalschrift*, CXVII (1936), 457-65.

²¹ Albert Mitterer, "Profanwissenschaft als Hilfswissenschaft der Theologie," *Zeitschrift für katholische Theologie*, LX (1936), 242.

²² *Ibid.*, p. 243.

So much then for the respectful eulogy of a defunct hylomorphism.

For the professional theologians Mitterer's tone is one of caustic indignation and stirring challenge. To instil a sense of personal shame Mitterer recounts how:

. . . In order to rescue such theories from ruin, there are those who do not blush to drag into the issues mysteries of the faith, such as that of the holy Eucharist Once upon a time, namely in the period of St. Thomas, one used to adduce a theory of purely natural and secular character, such as the hylomorphic interpretation of spatio-temporal phenomena, as a means whereby one might make more clear in terms of a natural, scientific knowledge the truths of revelation, even the mysteries of faith, as for example, the holy Eucharist. Then indeed was secular learning a handmaid of theology. But today theology must be suborned into service in order to save ancient theories of natural science, such as that very same hylomorphic interpretation of sensible appearances. Here indeed theology is the maid-servant. No longer is theology the end and secular lore the means; no, now a natural science is the end and theology is the means.²³

And then to the properly chastened and humbled confraternity of theology, who meekly permitted themselves to be used as pawns in unfair philosophical contest, Mitterer directs his stirring challenge to declare and redeem themselves by realignment with the vigorous advances of contemporary science:

. . . The more theology becomes conscious that she is the queen and not the handmaid of the sciences, the less ready will she be to perform such menial tasks in the service of secular learning. More than just that, theology will cashier from their rank as aides-de-camp such theories as are openly admitted to be untenable today, and replace them by other and younger forces in the same way as heretofore theology took into its service a vigorous and universally accepted theory, such as hylomorphism once was.²⁴

For if imitation is the sincerest form of flattery, then paradoxically theology will be most loyal when most revolutionary, most traditional when most novel, most conventional when most daring and bold.

Just at this point in the crucial conflict Mitterer discovered Hans Meyer's *Die Wissenschaftslehre des Thomas von Aquin*. The substantial coincidence of their ideas refreshed and encouraged him to continue his task with renewed vigor and confidence.²⁵ In an article with the

²³ *Ibid.*, pp. 243-4.

²⁴ *Ibid.*, p. 244.

²⁵ For at the same time philosophical critiques were attempting to whittle down the pretensions of his pseudo-metaphysical transcription of physical particles as *Hylosys-*

keenly provocative title, "Thomasische und neuthomistische Wissenschaftslehre," Mitterer wrote:

Altogether independently of my own researches, Hans Meyer has written a book . . . which I mention with special delight because it coincides to a remarkable degree with a book of my own, recently published under the title: *Das Ringen der alten Stoff-Form-Metaphysik mit der heutigen Stoff-Physik*. . . .²⁶

Nor is the agreement, although coincidental in fact, merely one of general mood or trend. It is almost a strikingly verbal identity:

Most of all Hans Meyer has clearly shown that the natural science (*philosophia naturalis, scientia naturalis, physica*) of Thomas is, as a matter of fact, natural science [*Naturwissenschaft*] and not a philosophy of nature [*Naturphilosophie*] It is indeed very significant to have an independent proof on grounds of copious documentary evidence that bodies and their structure were for Thomas a concern of physics, an object of natural science, not of metaphysics.²⁷

The measure of real coincidence is indeed striking.

With Meyer at his side as supporting witness, with a poignantly deep sense of the tragic elements involved, torn between a conviction anchored in facts and a sense of solitary exile from the fraternity of Scholastic philosophers, Mitterer states his case as clearly as the evidence seems to demand and as sympathetically as domestic differences require:

We are experiencing today a truly critical period in the history of hylomorphism as an interpretation of physical reality. In so far as this hylomorphism of St. Thomas purported to be a theory of physics, it has been completely and openly abandoned by all of us Scholastics. Bodies are not hylomorphically constituted in the sense of St. Thomas. They are hylomeric in physical structure according to the report of modern science. And yet, despite this reversal in physics, it is the opinion of at least many neo-Scholastics that these same bodies can today be regarded as hylomorphic in a metaphysical sense, that is, compounded, as heretofore understood, of potency and act in the order of essence. But according to Thomas metaphysical potency and

temismus, or a modern substitute for an outmoded hylomorphism. See for example J. de Vries, S.J., "Das Weltbild der neuen Physik und die alte Metaphysik," *Scholastik*, X (1935), 77-90. For a later critique see H.M. Braun, O.P., "Hylosystemismus oder Hylomorphismus?", *Divus Thomas* (Freiburg), XVI (1938), 420-58.

²⁶ Albert Mitterer, "Thomasische und neuthomistische Wissenschaftslehre," *Theologisch-praktische Quartalschrift*, LXXXIX (1936), 318.

²⁷ *Ibid.*, p. 319.

physical prime matter were one and the same thing, just as metaphysical act and physical substantial form were really identical and only rendered conceptually distinct for reasons of methodological procedure in science. How then can the metaphysical matter-form dyad survive the collapse of the physical counterpart pair with which it was really identified?²⁸

Mitterer's case may be poor. But no one could have handled its resources more effectively. The issue emerges as starkly clear. On the natural presumption that his final rhetorical question lacks a significant reply, Mitterer proceeds to a moving peroration for philosophers that parallels the previous plea for the benefit of theologians:

... What then was the Aristotelian-Thomistic method? St. Thomas accepted the contemporary, that is, Aristotelian physics and investigated its content under the aspect of being. The very same procedure must be followed today, if one desires to progress according to the method of St. Thomas. Modern man has been forced to abandon the ancient physics and to acknowledge the newer science. But instead of investigating the newer physics under the aspect of being, as St. Thomas studied the old physics, one attempts to take the old theory, which was the result of an ontological investigation of the old physics, and plaster it to physical bodies.²⁹

There is here the same subtle insinuation that a blind loyalty is the basest treachery, and that in following St. Thomas our contemporaries have really lost him. There is the same challenging paradox that true fidelity entails departure, that desertion implies rededication to the genuine task of Thomas.

The reader may have forgotten at this point the timid and tentative question, sandwiched between bigger issues, in the excerpted passage from Bernhardin Krempel. It was, as follows, in partial context:

... After the whole substance [*Wesen*]^a—or should we say substances—of the bread, and consequently the substantial form(s) and prime matter have been changed into the body of Christ, the same phenomenal characteristics (*accidentia*) impinge upon the senses as before the change. . . .³⁰

But apparently L. Baudimet did not forget it. For in his article in the *Revue apologetique* it is this precise question that generates the twin problems of (1) a plural set of transubstantiational conversions, corresponding to the plural set of chemical substances which compose before consecration a single host, and (2) a plural set of multiple in-

²⁸ *Ibid.*, p. 321.

²⁹ *Ibid.*, p. 323.

³⁰ Cf. note 17 *supra*.

stances of Eucharistic presence under the appearances of a single consecrated host, corresponding one-to-one with the presumed plural set of actual sacramental conversions. These two problems had been latent and simmering throughout the whole preceding period. They now erupt into the open and clamor for a reasonable and orthodox solution. The first time that they are broached as explicit questions, it is in what purports to be a sound and traditional theological framework. Moreover Baudimet feels no need nor desire to tamper with the concepts of a traditional Scholastic metaphysics. No such alterations seem necessary either to pose the issue fairly or to resolve it satisfactorily.

Baudimet addresses himself directly to theologians. Some, he finds, are easily content to take a rough and ready view of the situation, to identify themselves with the man in the street, and to ignore the issue as if it were really of no account. To such theologians Baudimet speaks sharply and decisively:

“ . . . The theologian in fact cannot be satisfied in this matter with what is enough for the baker and the steward. For them the unit totality which they handle, sell, and buy, is bread or a slice of bread. Even for the priest (as well as for his sacristan), the unit totality which he places on the paten, offers at Mass, and consecrates, is the host. But for the theologian that which is changed into the body of Christ is the substance alone. Hence it is faith itself which poses the problem in an order of realities in which common sense experience is altogether incompetent because it discerns very poorly between substance and accidents The distinction between substance and accidents is not artificial but real.”³¹

Convinced, then, that no conscientious theologian can afford to treat the problem cavalierly, the author is at great pains to state the issues very clearly:

Before consecration is the host an individual substance, or is it not rather an aggregate of plural individual substances? In the present discussion that is the *paramount* question. Now—and this point should be clearly understood—there is no concern here to devise some new concept of substance. The issue rather is this: given altogether unaltered the Scholastic concepts of substance and substantial unity, to determine whether there is as a matter of fact a single substance of that character or a plurality of such substances in a host. And in this question concerning a matter of physical fact, physics and chemistry have a right to contribute relevant information.³²

³¹ L. Baudimet, “Notre Seigneur, n’est Il présent qu’une fois dans l’hostie?”, *Revue apologétique*, LXV (1937), 546–7.

³² *Ibid.*, p. 547.

And what is it precisely that physics and chemistry do actually reveal to sober and serious investigation? Baudimet replies:

. . . In my opinion it is incontrovertible that a negative answer must be given to this question. For the philosopher the host is nothing but an artificial conglomeration of multiple particles If a host possesses some unit totality for common sense observation, such that one is warranted in calling it a single host, this unity is altogether of an accidental character, due solely to the incidental cohesions of the particles in the aggregate.³³

The reader will quickly recognize that with Baudimet's factual statement the issue returns to the supposititious objection of *Sum. Theol.*, III, q. 75, a. 6. It remains to be seen whether one can in good conscience also return to the answer which Thomas there confidently supplies.

After painstakingly reassuring the unsympathetic and sceptical theologian that there is absolutely nothing of deceptive semantics or altered metaphysics in his argument, but only those familiar and established concepts and terms which are their daily stock-in-trade, Baudimet proceeds carefully but relentlessly to draw the implied consequences of a plurality of substances in a *hostia consecranda*:

The theologian proceeds to construct a syllogism, the major of which is given by revelation, the minor supplied by philosophy. The major which revelation provides is: That which is changed into the body of Christ, is the substance of the bread. The minor, submitted by philosophy, runs: But in a host there is a plurality of bread-substances [*substances-pains*]. The conclusion follows: therefore in the consecration of a host a plurality of bread-substances [*substances-pains*] is changed into the body of Christ.³⁴

One should note cautiously at this point that for some reason not clearly disclosed Baudimet does not exploit in his reasoning the full resources of his factual data. The plurality of *substances-pains* to which he alludes, is as much a chemical fiction and creation as the *substantia panis* of conventional discourse. For the very same indubitable analysis which proves to Baudimet that the common *substantia panis* is nothing more and nothing less in point of physical fact than an aggregate of *substances-pains*, discloses with equal clarity and decisive evidence that the *substance-pain* is itself an aggregate of diverse chemical substances. If the method of analysis is valid at all, it is inexorably

³³ *Ibid.*, p. 548.

³⁴ *Ibid.*, p. 553.

valid all along the line. To halt the process of resolution at the level of *substances-pains*, as Baudimet does, may be reasonable for some other undisclosed motive. But it is not necessary nor true by reason of any limits within the method itself.

Baudimet moreover is quite conscious that the logic of his adopted position is not arrested at this point. The next level of consequence is inherent in the preceding and apparently inevitable. The theologian therefore follows the direction that reason indicates:

There is in the host a plurality of bread-substances [*substances-pains*]. But there are exactly as many conversions as there are bread-substances [*substances-pains*]. Proof: *actio est in passo*. The *patiens* here is the substance of the bread. But this substance is plural and multiple. Hence plural and multiple likewise are the actions of conversion.³⁵

But at this advanced stage there hovers over the argument an imminent and apparently inescapable corollary. So Baudimet continues:

. . . But each single member of this plural set of conversions has as its *terminus-ad-quem*: the body of Christ. Hence it follows that transubstantiation produces a plural set of multiple instances of the presence of Christ That the Eucharistic presence of Christ in the host is as a matter of fact equivalent to a plural set of multiple instances of Eucharistic presence, such is the proposition which we deem it necessary to maintain.³⁶

Although Baudimet arbitrarily limited the range of his concluding proposition by arresting the process of his analysis at the unreal and fictional level of *substances-pains*, the number of which in a single host before consecration is appreciably less than the total aggregate of associated chemical substances, he ventures no definite number as a rough and tentative estimate for the multiple instances of Eucharistic presence.

At precisely this stage in the historical development of the problem (1937) the International Eucharistic Congress was successfully and impressively celebrated in Manila. More than continental publicity was accorded to the event. The Eucharist and its place in contemporary culture attracted more than a modest amount of public attention from those not of the faith. Not all of this attention was sympathetic or favorable. Some comments on the occasion were instinct with hos-

³⁵ *Ibid.*, p. 554.

³⁶ *Ibid.*, pp. 554, 561.

tility. Others merely posed carefully calculated questions or proposed very challenging assertions. It thus came about in that year that a certain semi-anonymous "Fr. M." wrote in the journal, *Volk im Werden*, an article on "Dogmatische Physik." The loose threads of the entire story now come together to form a pattern. The random rays of light begin to focus in unison on the central issues. The problems erupt in an aggressive fashion into the realm of professional theological consciousness.

Without delay and as a routine task Father Joseph Ternus, S.J., undertook to reply to Fr. M. From the list of several theses and sub-theses of Fr. M., each of which Ternus girds himself to rebut, two are pertinent directly to our immediate concerns and are selected for comment:

1. He who accepts transubstantiation is irrevocably tied to the dogmatic physics of the thirteenth century and must accordingly reject modern scientific physics.

6 (a). What then is changed? The molecules, the atoms, the electrons? Single elements or chemical compounds?³⁷

The first thesis of his opponent is crushed by Ternus under the sheer mass and weight of heavy counter-assertions:

In the same way the first thesis, which is more or less the main thesis, betrays itself as an impudent assumption for which the author to be sure never adduces a proof. Such proof would have to be derived from dogma, from the history of dogma, and from modern physics. But it is dogmatically false that a profession of faith in Eucharistic transubstantiation has anything at all to do with the physics of the thirteenth century. It is false on the grounds of the history of dogma to assert that the Lateran Council in 1215 "declared a physical world-view of the thirteenth century to be infallibly true." And it is also false that belief in Eucharistic transubstantiation conflicts with the data of modern physics.³⁸

Ternus apparently operates on the principle: *gratis asseritur, gratis negatur*. Vigorous and partisan debate may be kept at white heat by this device. But it is a fact that problems are not thus solved, nor even moved significantly ahead toward an ultimate solution.

In preparing the ground for his treatment of 6 (a), Ternus is careful

³⁷ Joseph Ternus, S.J., " 'Dogmatische Physik' in der Lehre vom Altarssakrament?", *Stimmen der Zeit*, CXXXII (1937), 221.

³⁸ *Loc. cit.*

to settle beforehand some assured points of departure. Against Mitterer and Meyer, Ternus is quite confident that:

The doctrine of transubstantiation in the Eucharist can nevertheless not at all come into conflict with modern physics because the dogma in its basic formulation cannot in general be brought into conflict with any physics at all For after all not a single one of all the metaphysical concepts: essence, essential change, substance, accident, individual, and subsistence (and many others of similar character), pertains to the sphere of physical science, the scope and focus of which concern only the quantitative characteristics of material change.³⁹

No one can seriously dispute with Ternus that this transcendental position is a citadel of security. There certainly may one find refuge from all conflict and imminent contradictions. But precipitous flight to this refuge may, and often does, abandon serious and licit questions that remain as orphans in the world of intelligence which must be integrated to survive. Such a procedure prevents discord. But it cannot, as such, achieve harmony.

The second position which Father Ternus very frankly adopts is one that is by very definition an infinite distance removed from the dangerous grounds on which the more notorious of his less cautious predecessors took their stand:

. . . The sequel to Maignan, Witasse, Tongiorgi, Palmieri, and even to Franzelin, has shown what happens when dogmatic theologians desert their domain and meddle with physics. These examples have consequently given fair warning to the sound critical instincts of subsequent theologians to steer clear of the perpetually questionable perspectives of an essentially temporary and progressive physics, and to keep hands off things concerning which no counsel is contained in revelation and with which no self-respecting theology needs to bother.⁴⁰

It would appear that Father Ternus is correct in his observation that physics is never stationary, always in flux and advance toward new frontiers, and consequently always temporary because always contemporary. But Father Ternus fails to discern that physics by and large has never once moved backwards. To be sure, there have been experimental setbacks to theoretical predictions. But science has in the main and in ways open to critical examination always moved forward. Now something that moves forward always, and always moves forward must of necessity leave in its rear solidly occupied terrain which grows

³⁹ *Ibid.*, p. 222.

⁴⁰ *Ibid.*, p. 227.

more permanently secure the more distant daily becomes the continuously further removed frontier. There are scientific positions, once on the fringe of a frontier, but now in the deeper backwoods, where one may fix a critically chosen stand without fear of sudden and irredeemable displacement. Which suggests, at least, that one can now do successfully in the secure and peaceful rear what Tongiorgi and Palmieri were sure to bungle on the frontier. And the awful choice does sometimes confront the theologian as a professional responsibility: to take the carefully calculated risk that gives promise, if successful, of anticipating the pitfalls that otherwise remain to endanger the steps of the ambiguous faithful.

Protected then by his deliberate caution, and with one firm hand on the guard-rail that separates metaphysics from physics, Ternus replies to 6 (a):

What then is changed? The molecules, the atoms, the electrons?—Answer: Bread is changed into the body of the Lord, wine into the blood of the Lord, and changed in such a way that the bread and wine respectively merely seem to be present. Precisely all that and only that is changed which must be changed if the words of the Lord are to be true: “This is my Body, this is my Blood”—and true, not in a purely symbolic sense, nor even in a merely spiritual sense, but according to the true and real substance of the flesh and the blood of the Lord, both of which come to be present in the place of the substance of the bread and of the wine by virtue of the words of consecration, without however removing the objective appearances of the bread and of the wine which remain and affect the sense organs. Of atoms and electrons, of elements and compounds, there is no need to utter one single scientific syllable.⁴¹

It may be that a determined metaphysician can afford to affect such *hauteur*. But it is a luxury beyond the means of the common man who knows the worries that harrow his soul. If Baudimet possesses the correct theological attitude, then in this instance Ternus has it not, and *vice versa*. But there is one more word in the same strain:

... The theologian need not concern himself with the question whether within the confines of a host to be consecrated there is a single substance or a plurality of substances in a physical or a cosmological sense. The rule-of-thumb criterion for unity and multiplicity in the everyday sense of the things that average people handle, is all that he needs for dogma and for life.⁴²

⁴¹ *Loc. cit.*

⁴² *Ibid.*, p. 228.

But does Father Ternus not discern that the "everyday" estimate of unity and plurality by people who spend their anxious days in an "atomic" age, will inevitably be oriented more and more toward the public facts of physics? For "everyday" estimates are also temporary, precisely because also contemporary.

Mitterer's passionate pleas and Ternus' provocative irritations were not to go without effective result. Francis Unterkircher, disciple of Mitterer, rose to the challenge in 1938.⁴⁸ Unterkircher's physics sets the framework for his philosophic elucidation of the Eucharist mystery. Matter and form are definitely superseded and cannot be adapted successfully to modern evidence. The basic particles of matter are *hylons*, each of which is a *substantia materialis* indeed but not yet a *substantia corporalis*. This is the basic difference between hylomorphism and hylosystemism, as the new theory is called. Such hylons are very likely unextended force-points which, when densely packed in constellation patterns, constitute a *substantia corporalis* by reason of resultant extension. St. Thomas had things topsy-turvy. For Thomas *substantia materialis* is the originative cause whence proceed quantity and quality as accidents. It is rather the reverse. Quantity and quality are the intrinsic constituents of a corporeal substance. In the Eucharist therefore it is no longer the divine task to substitute by direct efficient activity for the natural sustaining causality of material substance. The fact is rather that God preserves in continued existence after consecration the constituent causes of a body: quantity and quality, but miraculously obstructs their secondary effect, which is not so much the sensible appearances of a physical body, but rather its actual existence as a substantial unit. Unterkircher finally maintains that this interpretation is compatible with traditional dogma, concerning the total conversion of the *substantia panis*. It is true indeed that the hylons endure throughout the change but in the *terminus-ad-quem*, by divine suspension of their connatural effect, they do not actually constitute a corporeal substance and are consequently deprived of their identity as strict corporeal substances. They are, as it were, only parts of a body *in potentia*.

And once again at this critical 1938 juncture Hans Meyer reappears

⁴⁸ Francis Unterkircher, *Zu einigen Problemen der Eucharistielehre* (Innsbruck: Tyrolia Verlag, 1938).

on the scene as author of the visibly impressive opus, *Thomas von Aquin: sein System und seine geistesgeschichtliche Stellung*. Here the same fundamental theme is repeated with more volume and in a slightly higher key:

Hylomorphism is for Aristotle and for Thomas both a physical and a metaphysical theory. Thomas himself maintains firmly that physical substantial change grounds the intellectual insight into *materia prima*. Both philosophers erect a purely theoretical distinction between the research areas of science and of metaphysics. Natural science has as point of departure the stability of the physical elements and the forms of their interaction. Metaphysics investigates these constituent parts of bodies under the generalized aspect of being with regard to their type of existence and their relation to the total being of the composite substance. As a matter of actual fact, however, both viewpoints coalesce in the construction of a single world-picture. If hylomorphism possessed only inductive, scientific grounds, then it would fall instantly with their present collapse. . . .⁴⁴

There were de Munnynck (1928), Mitterer (1929), Maritain (1932), Meyer (1934), Krempel (1935), Mitterer (1936 *ter*), Baudimet (1937), Ternus (1937), Unterkircher (1938), Meyer (1938), and the reign of confusion. Mitterer, Meyer, and Unterkircher violently contest the validity of the grounds which underlie Baudimet's solution and Ternus' calm security. De Munnynck, Krempel, Maritain, Baudimet, and Ternus share the same fundamental outlook but interpret its obligations and its implications in widely divergent ways. Baudimet sets the theologian in the middle of the muddle. Ternus considers it the serene wisdom of theology to leave bad enough alone for fear of making it worse rather than better. Mitterer, Meyer, and Unterkircher make the situation worse under the conviction that they are thereby making it incredibly better. There were de Munnynck (1928), Mitterer (1929), Maritain (1932), Meyer (1934), Krempel (1935), Mitterer (1936 *ter*), Baudimet (1937), Ternus (1937), Unterkircher (1938), Meyer (1938), and the reign of confusion.

Into this chaos A. H. Maltha, O. P., attempts to introduce some order and system.⁴⁵ He is keenly aware of the historical development of all the relevant literature. This equips him admirably for a synoptic

⁴⁴ Hans Meyer, *Thomas von Aquin: sein System und seine geistesgeschichtliche Stellung* (Bonn: Peter Hanstein Verlagsbuchhandlung, 1938), p. 76.

⁴⁵ A. H. Maltha, O.P., "Cosmologica circa Transsubstantiationem," *Angelicum*, XVI (1939), 305-34.

view and affords him the opportunity to reduce the jumbled elements to some lowest common denominator. Moreover he is resolved to test individual items in the controversy by comparison with theological tradition so far as his vast lore and erudition can recall its contents. For example, Maltha is set to determine theological opinion on the question (p. 306): "... utrum relatio continentiae sequatur physicam unitatem vel pluralitatem, an e contra nostram moralem aestimationem?" Maltha moreover filters from the mass of confused materials their pith and gist so that:

... putamus lectionem libri Unterkircher *unicam quaestionem involvere* sc. quomodo accommodanda sit doctrina thomistica transsubstantiationis in hypotesi hylomorphismi ad moleculas vel aliquid huiusmodi translatis vel etiam simpliciter derelicti. . . .⁴⁶

And the core of all of Baudimet's considerations is reduced to the following (p. 311): "... Praecipuum ergo quod ex his omnibus est retinendum est dubium: an habeantur in omni consecratione plures transsubstantiationes et praesentiae propter pluralitatem numericam vel etiam specificam substantiarum conversarum. . . ."

With reference to the very ambiguous and very critical issue concerning the theological relevance of moral estimates as criteria, Maltha first reports after a vast survey of the pertinent materials:

Apud S. Doctorem, qui in tractatu de baptismo habet aliquam enuntiationem plus minusve redolentem aestimationem non-physicam, aliquid simile semel vel bis occurrit in quaestionibus de Eucharistia (*Sum. Theol.*, III, q. 66, a. 4), sed isti textus, nullatenus clari, aperte vincuntur per exercitum textuum tractantium rem modo physico: cogita quomodo loquatur de corruptione speciei, de solutione speciei, de criterio non sumendo ex figura vel colore vel similitudine sed ex generabilitate, de activitate vini respectu aquae (*In IV Sent.*, d. 3, q. 1, a. 3, sol. 2; d. 11, q. 2, a. 2, sol. 3; d. 11, q. 2, a. 4, sol. 2; *Sum. Theol.*, III, q. 74, a. 31, ad 2m; q. 75, a. 4, ad 2m; q. 74, a. 8); cogita etiam quomodo pro eo panis est alia species a massa cruda (*Sum. Theol.*, III, q. 75, a. 6, ad 1m; *In IV Sent.*, d. 11, q. 1, a. 1, sol. 3; d. 11, q. 2, a. 2, sol. 1). Unde videtur dicendum quod S. Doctor fere identificat considerationem moralem (quod non potuit negare, cum sacramentum sit signum pro hominibus) et considerationem physicam.⁴⁷

When to these apparently definitive testimonies of St. Thomas one adds the accumulated endorsements of a representative cross-section

⁴⁶ *Ibid.*, p. 309.

⁴⁷ *Ibid.*, p. 312.

of other theologians, the conclusion seems to Maltha inescapable that (p. 317): "...ad sacramenta requiri physicam substantiam et forte etiam moralem conditionem, sed non sufficere solam aestimationem moralem." If this unequivocal conclusion can survive the necessary criticism of colleagues, one major and indispensable principle of solution for these problems will have been securely gained.

After a sober and impartial review of the copious and cogent evidence available, Maltha furthermore concludes (p. 310): "...concedimus fere omnes hodie approbare granulos farinae et guttulas aquae per coctionem panis non fieri unam entitatem numericam. . . ." This point acquired, Maltha next proceeds to exclude the possibility that nevertheless one and only one conversion occurs (p. 326): "...non posse affirmari hic haberi unam conversionem ex unitate accidentali diversarum substantiarum in pane et vino admittendarum. . . ." And in order to compose his mind peacefully and calmly before accepting the conclusion to which logic leads, Maltha invigorates his powers of judgment by alluding to an accepted and analogous case (p. 326): "...si sacerdos plures hostias consecrat, potest quidem fieri concertatio an habeatur numerice unum sacramentum vel habeantur plura sacramenta, sed omnes concedunt haberi plures transsubstantiationes." And if the simultaneous occurrence in one and the same set of circumstances of multiple instances of conversion is not absurdly grotesque or strange, then (p. 329): "...Omnibus ergo consideratis credimus Corpus Christi pluries adesse in hostia nempe secundum numerum substantiarum specificae vel numerice distinctarum quas habuit panis vel vinum." And by way of succinct summary in thesis form (p. 333): "Admissa praedicta pluralitate specifica, immo propter serias auctoritates pluralitate numerica intra unamquamque speciem, videtur concedi debere pluralitas conversionum et praesentiarum Christi." Maltha still harbors some disturbing doubts and is not completely sure that this is the uniquely acceptable solution. But he sides in the end with the position outlined above as most adequate at the moment to meet the inescapable and indubitable problems involved.

After Maltha came Hitler, the *Wehrmacht*, World War II, and a regretful interlude in theological attention to this rapidly ripening issue. Ten long years later there appeared in the *Gregorianum* an article by F. Selvaggi, S.J. At this later and more mature stage of the com-

plicated discussion it was expected that the present article would out-distance previous literature in poise, depth, balance, and finesse. Selvaggi does not in general disappoint these expectations.

Poise is apparent in his almost casual and unambiguous assurance that the problem is relevant to theology:

The rapid and uninterrupted advances of the sciences in all areas of research solicit with right good reason the concern of Catholic theologians and philosophers, imposing upon them the task of investigating and clarifying the agreement, or at least the exclusion of all conflict, between truths of the faith which always remain exactly the same as they were, and results of science which are never exactly the same as they were.⁴⁸

Selvaggi then, like Thomas,⁴⁹ does not resent these issues as irrelevant intrusions by a bumptious physics or by a philosophy that takes itself too seriously. Selvaggi, like Thomas, regards replies to such objections as proper and legitimate. Selvaggi, like Thomas, aspires to nothing less in the order of intelligence than luminous clarity.

Selvaggi, unlike Ternus, discerns in the ceaseless flux of research "the indubitable acquisitions of modern science" (p. 7). Henceforth intransigent incredulity in the face of assured scientific achievements must stigmatize a theologian as obdurately obscurantist. Selvaggi, unlike Ternus, who affected to ignore the threats of developing error at the roots of unanswered queries, is acutely conscious that the professional theologian must risk the remedy before the disease reaches an incurable stage. For (p. 9) "whenever actual attempts at readjustment tend to compromise the integrity of the faith, the believer of course but above all the theologian cannot excuse themselves from serious research concerning those problems which the certain acquisitions of science can actually raise." Never again then need a respectful and responsible inquirer in this field be subjected *ab initio* to the intolerable indignities of an unauthorized suspicion. Selvaggi, unlike Ternus, is robustly realistic (p. 9): ". . . the dogma of the Eucharist is in touch with physical realities, such as the substance of the bread and of the wine, the Body and the Blood of Christ, the species or the sensible accidents, and is consequently in intimate contact with natural science

⁴⁸ F. Selvaggi, S.J., "Il concetto di sostanza nel Dogma Eucaristico in relazione alla fisica moderna," *Gregorianum*, XXX (1949), 7.

⁴⁹ *Sum. Theol.*, III, q. 75, a. 6.

and the philosophy of nature." And this intimate interrelationship between facts and faith, between science and religion, between physics and philosophy, not only renders legitimate any respectful intercommunication between them, but also imposes a compulsory concern with such matters upon the conscience of the professional theologian. Selvaggi, unlike Ternus, concludes that (p. 9): "... The theologian can adopt a pose of aloof disinterest in the positive assertions of modern physical science only at the risk of providing both antagonists and revolutionaries with a pretext for abandoning theology and surrendering the faith itself as something irredeemably anachronistic." Nor will any random answer be adequate, any pious platitude be enough. The theologian must labor to provide (p. 9) "a satisfactory reply to the legitimate demands of an educated mind in the contemporary context."

Balance is shown by Selvaggi in the adroit mastery of theological sources, and finesse displayed in the deftness with which the central point is disengaged from the welter of the literature. For Selvaggi reports as his result:

If we consider in the light of Catholic tradition the formulations of this dogma, it is clear that the concept of substance expressed in them implies a precision which does not appear with sufficient clarity in the common sense notion of substance, but which in the formulae themselves stands out stark and clear in the contrast between substance and appearances.⁵⁰

In all subsequent inquiry, therefore, it would seem that one must be impatient with those who assume without warrant or proof that the real issue is to be solved in terms of the conventional, cotidian estimate of the common man. Such presumption disqualifies further participation in the solution of the question. The judicial balance of Selvaggi is again exhibited in the decisive but impartial manner in which Unterkircher is dismissed from court (p. 22): "... this interpretation appears unacceptable because on its own terms: (1) the substance of the bread and of the wine does not entirely cease to exist, and (2) the accidents or the species of the bread do not endure without a subject in which they are grounded."

Depth is manifested by the methodical, objective, impartial procedure by which Selvaggi undertakes to investigate and, if possible,

⁵⁰ Selvaggi, *op. cit.*, p. 16.

settle the basic issues of plurality involved. The conclusion is solid and precise (p. 41): "... Neither in a chemical sense nor in a philosophical sense can one speak correctly of the substance of the bread. One ought rather to speak of the various substances which, amalgamated in a certain proportion, produce that object to which in common usage one refers as bread." There is no reason why this statement should not stand as definitive. It just so happens that *panis* is a collective noun which no loose usage can modify, obscure, or revise. It just so happens that *vinum* is a collective noun which deserves to be precisely employed in a conscientious and scientific theology. Hence Selvaggi notes:

Modern science, therefore, provides no warrant for speaking, as St. Thomas did, of the single substantial form of the bread which informs and endows with integral unity the whole mass or even a fragment of the same. And the same holds for a single substantial form for the wine. The form of bread, precisely as such, is consequently an accidental form in the sense of Scholastic philosophy, which does not inform *materia prima* but *materia secunda*. This means that the form of the bread is that particular amalgam of substances, compounded in this particular way. And the same holds also for the wine.⁵¹

There is likewise no reason why this statement should not stand as definitive.

Selvaggi moreover musters all his forces and the reader his attentive interests, as the final conclusions approach. Here they are:

... We are obliged therefore to assert that when in Transubstantiation by the words of Christ all the substance of the bread and of the wine is changed into the Body and the divine Blood of Christ, then the protons, neutrons, and actual electrons which pertain to the mass of the consecrated material, the atoms, the molecules, the ions, the molecular compounds, the microcrystals, in sum the whole totality of the substances which constitute the bread and the wine cease to exist and are changed into the Body and the Blood of Christ. There remain instead the accidents which belonged to all these substances, extension, mass, electric charges, kinetic energies which derive from them, and consequently all the optical effects, acoustical effects, thermodynamical and electromagnetic effects that these forces are capable of producing. It is all of these together that constitute the sacramental species, namely the sum total of directly perceptible appearances.⁵²

So far, so good.

But there do remain questions that have been posed and do not receive an explicit answer in these excellent pages of Selvaggi. They

⁵¹ *Ibid.*, p. 42.

⁵² *Ibid.*, p. 43.

are two: (1) given the plurality of substances in the aggregate *terminus-a-quo*, is there or is there not a corresponding plurality of conversions?, and if there be such a plurality of conversions, (2) is there or is there not a corresponding simultaneous multiplicity of instances of Eucharistic presence? Until these related questions receive a satisfactory answer, the problem of Eucharistic presence will remain as correct but as unclear as it currently is. If and when these inquiries meet with an adequate response, then a serious and accurately informed philosophy of nature may be equipped to put at the disposal of an alert theology those luminous and metaphysically processed insights into the physical nature of place and space and time which modern relativity theory has gained. The *fides quaerens intellectum* is always with us.