

- ① Brouillon de la 1<sup>re</sup> confér. par CDK.  
ff 124-123.
- ② Copies faites d'après enregistrement des conférences (corrigées par Th. De Koningck)
- lecture I : 20 pp.
- lecture II : 19 pp.
- lecture III : 18 pp.
- lecture IV : 21 pp.

Ces conférences ont été corrigées par <sup>Mgr</sup> ~~Mgr~~ Anthony Durand  
et par Th. De K.

~~les 2 premières~~

les confér. I et II ont été publiées dans: The Divine Synthesis  
en 1968.

1. C.P. Snow's Two Cultures: humanistic & scientific.

A third man? He does not suggest that. I would say that each of the two should be that third man before they become distinct and keep that third man, the mediator, within themselves. This means what the Greeks called *paideia*.

The separation began in the late Middle Ages. As yet no overt opposition - not the kind Sir Charles observes in England today.

2. Here is how I see the separation grow.

After S.Th. phil. & theol. become extremely technical. Seen in the degeneration of vocabulary. Don't urge to make distinctions before see what they are really about: no attendance to that a priori of which distinctions are to be made. E.g., "There are four kinds of causes." Such a procedure winds up with causes that exist only in text-books, and they accordingly can be burnt. This procedure leads us farther and farther away from what we first and most basically know. Take this word "cause" or "αἰτία": αἰτίος meant "responsible", etc.....

The whole point is that the obvious is being masked, overlooked as trivial - probably because the obvious is what everyone knows - and the less known is then used to explain the more known. This, S.Th. said, leads to the use of words with unknown meanings.

The card is being put before the horse; i.e., the horse is forgotten.

What is a word? ..... They first signify things as we first know them. They first belong to ordinary language.

Then the poets become aware of the inner wealth of what our words stand for - that these cover so much more than they do in ordinary usage. When talking we can talk thus because the materials we construct with are <sup>already</sup> known, but by arrangements (e.g. metaphor), we throw new light up what we already know.

It has been said that the poet is a person in love with words. This is materially true, for he does not love words for themselves but for what words stand for and with what they can be put to use to make them living voices, to render them incantatory.

But what we are concerned with right now is that the poet cannot afford to abandon ordinary meanings and become so allusive that every line he speaks calls for a tome of commentaries without which the line has no meaning, without which the line itself ~~stands~~ remains mute. This is just another way of saying that the poet must abide with the well-known words that remain hidden in ordinary speech, and when he poetizes, he must remain direct.

Poetry, S. Th. said, "et de his quae populi defectum veritatis non possunt a ratione capi, et ideo oportet quod [ratio] quibusdam similitudinibus seducatur." "Now is the winter of our discontent bowed down with sorrow by this son of York."

S. Th. also said that poetry should be taught before philosophy. (Rhetoric, too.) There are many reasons for this. But the one we are concerned with right now has nothing to do with the psychology of youth. It is that the poet and philosophy used words whose first meanings are commonly known. Winter is winter, and discontent is discontent. But the winter of our discontent, that is known too, as soon as the poet has said it. There is an initiative that words and meanings do not take of themselves. The poet is a maker and a midwife. He can put the familiar world ablaze, sometimes quite noiselessly and make us understand what we had never seen before, or never seen that way.



(4)  
The litterae humaniores were a deliberate return to the great  
classical literature, chiefly of the poetic and rhetorical type (though I would  
like to get  
Julius Caesar in  
here too).  
It was not exactly a return, but rather a seeking, in  
the past <sup>achievements</sup> the means to fill the hollow of the present;  
more profoundly, one might say that they sought the  
truth of the present. But preceding, the Greeks, and the  
Romans in their time, had lived so intensely in a timeless  
present, one that is still with us today but in the banner  
of language. Thomas More and Erasmus <sup>learn this out in their own achievements.</sup>  
like the poet, the philosopher dwells <sup>first of all</sup> on the truth of  
the present.

The phil. too must use ordinary language, up to a point; but as he observes that words are used for different meanings, and it is his business to be explicitly aware of this (as it is in a similar way that of the philologist), he must try to detect the relatedness of these diverse meanings, and see how a single word grows and proliferates in diverse direction. E.g. λόγος, φύσις.

Why is ordinary language so important? What does it express? How do we know these things? In the original level, criterion practical. E.g. ὕλη, materia, ὄργανον, πορφυ, εἶδος, παραδείγμα, ordo, whole, part, genus of species. Even in ordinary language new levels of meaning are built upon the old. The philosopher notices that there are many things we name and know without special investigation and reasoning; that some hidden discourse is ~~to~~ involved in the growth of a single word. As I said yesterday, all of Meta I is devoted to words in this respect.

What is of special interest to the phil. is to grasp a meaning that is basic as to us and upon which later meanings depend to be understood. If his own vocabulary becomes divorced from those basic readily verifiable meanings it ~~soon~~ follows that he cannot know what he is talking about no matter how much he talks (actually he just makes noise).

The dead-end of schol. referred to yesterday was run into when ~~the~~ the later meanings of words used in philosophy were divorced from meanings known by the man in the street. It is this kind of divorce which comes to full circle in null classes, ~~and~~ classes with only one member, ~~and~~ parts that are severally greater than their whole, and relations without terms, not to mention words that do not signify.

Lecture #1

Name of Lecturer: DR. CHARLES DeKONINCK

Title of Lecture: SCIENCE & THE HUMANITIES IN THE RENAISSANCE

Date: August 13, 1962

of the American philosophers. And as you all know, ...

INTRODUCTIONS: I don't want to take his time, and I'm happy

to have this chance to say just this one good word, but all

Sisters, Father, gentlemen, we are happy to have with us  
and will be saying good words for him very shortly. Dr. DeKoninck  
this morning two newcomers to our university. Not newcomers in

the sense that they have not been thought of and talked about for

a long time. Father Leo Ward is the head of the Philosophy De-

partment at Notre Dame and he is taking Msgr. Perky's place as

the Rector of this university, and Msgr. Perky was supposed to

be down for the first week but he got back from Europe late and

he had lots of things awaiting him in Washington so he was unable

to come, but we have now Father Leo Ward who is much interested

in the new college, the ideal college, and he has helped us in

planning all of this from the very first, and last year came down

at Christmas time to help plan this very session. So I'm happy to

welcome Father Leo Ward of Notre Dame as our Rector for this and

the following week, and I hope he will introduce our new professor,

Dr. DeKoninck.

Thank you, your Excellency. I'm very glad to see all these  
philosophers, scientists, and theologians and artists and integra-  
tionists, and to come again to this university. Many of you know  
Dr. DeKoninck from Laval, who is a sort of cosmopolite. I commute  
between Asheville and Indiana and other points west, but he commutes  
all over North America to say the least, with his lectures on  
philosophy. I don't lecture on philosophy. I just hitchhike around  
the world and have more or less a good time. But it's a pleasure  
for me to have the honor of saying a good word for my friend Dr.

~~DeKoninck. Dr. DeKoninck is one of the most articulate and prolific  
of the American philosophers. And as you all know, .....  
university. So I don't want to take his time, and I'm delighted  
to have this chance to say just this one good word, but all of  
you will be saying good words for him very shortly. Dr. DeKoninck.~~

[illegible]



DR. CHARLES DeKONINCK

Excuse my attire. I felt that being down south, one might as well dress as one should dress down south, especially when one is from the North.

I'm going to talk to you about science and the humanities, first of all from more or less an historical point of view. We might think of a book that I saw on the list of recommended reading. I don't know who suggested it -- I think Father Walter -- Two Cultures -- Scientific and the Humanistic Culture by C.P. Snow, in which we have reached, as it were, the deadend, provisionally deadend anyway, of a separation that began in the Renaissance, and ~~the~~ separation which I think occurred somewhat naturally. It was inevitable. Remember how Sir Charles describes the group of mathematicians and so-called pure scientists on the one hand, and then the men of letters on the other, the two groups sneering, one at the other, having utter contempt for what they're doing. The men of letters know no mathematics; the mathematicians know no Greek and well, here you have this separation, which is of course a very serious one. Because it is not just a division on the level say of specialists, among specialists, but it is a division which will find its repercussion even among the average newspaper readers. So the situation is serious. It began in the Renaissance, and there I think it was inevitable, but it did not take the learned people at that time as far as it does take them now.

Someone has suggested that between the humanist who specializes in classical letters, if he has any degree of excellence, and the scientist on the other hand, such as the mathematician, mathematical physicist, biologists, the purely experimental biologist, and

so on, that there should be a third man between them to somehow get them together, and to explain to the scientist and the humanist and vice versa. Well, Sir Charles doesn't suggest this solution. No, he hits a suggestion, though it is very vague, that I think amounts to what I will suggest -- namely, that the third man should be the first and the second, first of all. That is, each of these two fellows who are supposed to be in opposition, should be their third man. That is, they should have first of all something in common which allows them, they themselves, to discuss their respective problems. And finally when they have achieved certain results -- now the humanist, by the way, means he is also the philosopher -- so that when they do achieve certain results, they can discuss them with one another instead of having to have recourse to a third man, an interpreter whom they themselves could not possibly understand. So eventually that third man will have to be the first and second anyway.

The only way out, it seems to me, is that each of these two in so-called opposition, should be their own mediators, and this will be possible only, it seems to me, if we return to the classical idea -- the Greek idea -- of paideia. Which means nothing but this -- a sound instruction in basic matters, beginning with music which should begin from childhood, in infancy <sup>(cy)</sup> almost. Then grammar. Then a great deal of poetry. Not talk about poetry, but the reading of poetry itself, and the interpretation of poetry by someone who is competent to do so to draw attention to the relevant things. How this is said. How well it is said. And why perhaps it is well said. Why this should strike us so much. And poetry -- logic on the whole comprising rhetoric which is a more advanced form already

because in rhetoric you have much more explicit reasoning; although <sup>argued</sup> ~~by example and enthymeme, the latter being~~ it's still reasoning which is most effective when it has only

~~it's a syllogism with only two~~ composed of two propositions only, and that be ~~.....~~ But still it is a reasoning process.

One proposition is left tacit and because it is being left tacit the argument is more forceful. Otherwise it would appear trivial.

And then finally logic in the scientific sense of the word. That is, where logic <sup>is studied with a</sup> ~~is~~ view of the acquisition of science by application of it in this or that field of study.

And then a man would be ready. Would have a general formation. He would know for instance -- and very few people know it in fact -- he would know the difference between what he knows and what he does not know. And this is perhaps the chief -- how shall I say -- the chief realization of ~~paideia~~ <sup>paideia</sup>. That a man acquire judgment even in matters in which he is not a specialist. He will know, for instance -- this fellow, he's not talking mathematics. He's making rhetoric for the cause of the intuitionist, or something like that. It would be rhetoric. It's not mathematical ~~persuasion~~ <sup>line</sup> at all. You don't use persuasion mathematics. You use strict detached argument. A lot of people don't know this. For instance, a lot of people don't know the difference between poetry and rhetoric, or even between poetry and science, or poetry and theology, and they're radically different. Now to have judgment in these matters one must have ~~paideia~~ <sup>paideia</sup>. One must have a mind well shaped, thanks to discipline. And a rugged discipline such as the one required in grammar. (Do not pay too much attention to my own grammar. I always offer this excuse. I'm not an English speaking person, so this is just to protect

myself, and yourselves too.) I don't like him well. Of course the Popes before  
Now, as I said in the beginning, the separation between  
scientists and humanists began in the Renaissance, and in the  
very early Renaissance. But there was as yet no overt opposi-  
tion. As a matter of fact, if we had, not so many years ago, still  
excellent writers in English on scientific matters, if we had a  
man such as Sir Arthur Eddington for instance, who was a very fine  
writer; if in Germany you had men like Max Planck, who was also a  
fine writer, an eminent physicist, and even Heisenberg although he  
is not too good a writer it seems to me, although he still expresses  
himself -- anyhow, all these men had a classical education still.  
The classical education was dropped with the <sup>decision</sup> ~~decision~~ of humanities  
at least in my country of birth, origin, ..... these are  
the classical, ..... had nothing but modern languages,  
and a great deal of mathematics. Strangely enough, and this I  
know, that in the ..... <sup>to those who took up their Humanistic classes</sup> the modern languages were better  
known than <sup>to those studying</sup> the Humanities ~~Modernes~~, who were supposed to be specialized  
and be relieved of the classical languages to be able to devote  
themselves more to the modern ones. And we got a great deal more  
of Shakespeare than they did. They got a lot more Dickens for  
instance. Which is all right, but it's no substitute for Shakes-  
peare. And here is how I think the separation grew.

After St. Thomas who was the acme of the Middle Ages, coming  
immediately after and living along with St. Albert, philosophy and  
theology became extremely technical in his commentators and also in  
those who opposed him because St. Thomas [ ] do not have this de-  
lusion that St. Thomas was well received in his time. Not at all.  
And after him -- as a matter of fact, he's never been well received,

not until Leo XIII. He received him well. <sup>9</sup> Course the Popes before had also received him, but Leo XIII -- at that time, no one knew St. Thomas. Hardly anyone. A few vague Dominicans in fact. They were only vague. And he wasn't well -- and he's not well received today. Which is all for the better in the end. After all -- bonum ex integra causa, malum ex <sup>proceditque</sup> defectu. And the bonum ex integra causa -- that is, the integra causa is something extremely difficult to achieve. I mean it's easy to miss the mark, as the Pythagorians said. I mean, they had to point out to mankind that it's easy to hit the side of a barn but difficult to hit the exact bullseye. They didn't call it that way, but it amounts to the same thing. ]

Now this can be seen -- this degeneration of philosophy and theology becoming technical. Extremely technical, and it can be seen in the degeneration of philosophical and theological vocabulary, which moved away from possible familiar meanings. There was an urge to make distinctions before one could see why distinctions should be made. No attendance to that apropos of which distinction ought to be made. I could give you a very simple example. Take the expression <sup>the</sup> "distinguished according to reason" <sup>as</sup>, as it is translated. Distingu<sup>ctum</sup> ratione. Well, fine. Distinguished according to reason. But in St. Thomas that has seven or eight different meanings, whereas with these authors, they've got this set down. This is our philosophical vocabulary you see. If someone had asked them "What do you mean distinguished according ...?" Distinction between what you call matter and privation is only distinction according to reason? Distinction according to reason. Yes, but heavens! And what about distinction between essence and existence; is that the same kind of distinction? It's a different

kind of distinction. And aren't there things about which you make a distinction which has no foundation in the thing whatsoever, and if you call for distinction they refuse the distinction, they block them down under a can't understand, univocally, given one meaning, and the complication that came about by the multiplication of univocal meanings. Everything was restricted. I'll give you some more examples in a moment.

I've been putting the cart before the horse as this is what I would approach these people with. Here's a good example, about how philosophy dies. Philosophical vocabulary dies. ~~He~~ will step into the classroom, and the first thing he will say is "There are four causes." This is typical in scholastics. He will come into the classroom and he's going to give a class on causes. And you begin by saying "There are four causes." Namely -- and you usually give them in the reverse order -- a formal, material, efficient and final. But what do you mean by a cause to begin with? This is where the philosopher does not dare stoop down, because if he had to tell this, and if he knew -- all he could say is that the word 'cause' originally meant responsible, both in Greek and in Latin. .... meant a person responsible for something. And in Latin, too. When it became a technical term, its first meaning was legal. This fellow, called before the Court -- he was the cause of the accident. Or was it an accident? That calls for another distinction. At any rate -- why are we afraid to go back to things that we all know. Why do we have to start half-way? Why do we have to try to impress people by a vocabulary - four causes. Fine -- we distinguish them. We distinguish about 49 of them for the matter of that. But let's agree first of all upon something that we can and do agree upon. The agreement arrives

~~Let's not start talking. But there are some basic notions and~~  
only when we start talking. But there are some basic notions and  
basic truths that we all do agree upon, even if in talking we contra-  
dict one another. And this is the area from which we are inclined  
to move away. We think that wisdom lies in dropping all this, and  
recreating it all.

Such a procedure -- and bear in mind the example of the causes --  
such a procedure winds up with causes that exist only in textbooks,  
and they accordingly can be burnt, these causes. Now this is true.

If you read a modern author -- Aristotle distinguished so many  
causes -- and then *the great Greek commentators and afterwards*,  
was St. Thomas. But these are things that exist only in the books.  
They have nothing to do with reality -- nothing to do with what  
we really know. That's why I <sup>say</sup> ~~mean~~ that if you burn these books,  
you've burned the causes. If that is all you had in mind. Namely  
the words that you distinguish with some reference of final cause  
or that for the sake of which -- or when you say the final cause  
and you repeat it in more understandable English, and say by final  
cause I mean that for the sake of which you act. You build a  
house for shelter. The usual professor of scholastic philosophy  
at least at the undergraduate level, will be all mixed up. "That  
for the sake of which?" It's the only expression Aristotle ever  
used. He never used the expression "final cause". Final cause  
is an expression that was made in Latin by the scholastics, which  
is fine. .... finis. In English, final -- in ordinary English,  
I think final means we've reached the very end. Now this is final.  
But final cause is a little difficult to grasp. But you do say  
one acts for a purpose. I did this purposely. I did it on purpose.  
We all know what this means.

Well, incidentally, [I don't want to anticipate too much on what is coming in the following lectures, everything that we know and that we discuss in philosophy, even the philosophy of science, should be brought down to things that we all know. I mean -- more or less common -- as when I say "He did it on purpose." Everyone understands that. You don't have to argue about it. If he didn't do it on purpose then we can argue, but if someone says "He did it on purpose", there's no doubt about what is intended here. Even if it's wrong.]

So, such a procedure leads us farther and farther away from what we first and most basically know. The whole point is that the obvious is being masked, overlooked as trivial. Probably the obvious is what everyone knows, and the less known is then used to explain the more known. St. Thomas makes reference to this type of argumentation in his commentary on the *Physics*. These are actually very simple things, but they're most basic. St. Thomas points out at some length, to justify Aristotle, that we cannot demonstrate that there is nature, because everyone knows that there is nature. We all use the word. Isn't nature wonderful making such trees, or making a cat, or a lion, or a horse? We attribute these things to nature. Of course, this knowledge is very vague. (reproaches?) Then *Aviceenna* opposes Aristotle for saying that everyone knows that there is nature, and the meaning -- that is, the meaning that Aristotle has in mind in the *Physics* which is actually the third meaning of the word nature -- but ..... would want -- this knowledge is vague. And we like to have distinct knowledge, but distinct knowledge is not going to come about necessarily by demonstration, but by way of decision, decomposition, dividing in view of



a definition. This is how we acquire distinct knowledge, and by further investigation. But the impatient philosopher and ..... although, a very great philosopher, had this impatience, did not respect the human mode of knowing which goes from the vague, general, toward more distinct knowledge, and wanted to squeeze distinct knowledge immediately out of the vague knowledge, and this by way of demonstration. It can't be done. It can't be done, because if he tried to do that, St. Thomas said, he would try to manifest this. What is more known in terms of what is less known. Make clear the clear by means of the obscure. That's putting the cart before the horse. Well, philosophers have been doing this from the very inception of philosophy. And they continue to do so today. For instance, only recently, in the Canadian Philosophy Association meeting, annual meeting that was held at Hamilton, I had to do with some logical positivists and analytical philosophers -- they argue some interesting things, by the way -- but as soon as one mentioned something that is really basic, and upon which we all agree, and most of what is in Aristotle's strictly philosophical work is of this kind, -- <sup>they would say: "Aristotle's"</sup> but that's trivial!" Fine, but there are such things as tremendous trivialities. If you drop these things -- these things that we all know, if we forget these because one may say <sup>of Aristotle's</sup> trivial, they give a -- they can dismiss these things. No. Then, let's see what is trivial. Let's weigh it. Let's consider it. What do you mean by "rational" when you say "rational animal"? What do you mean by "animal" when you say "animal"? What does it mean, that word? Of what do you say animal? Let's figure this out. Very simple. What do you mean by a circle? That's trivial. But everything can depend on it.

of Aristotle. Take for instance Book 1 of the *Metaphysics*. What do you mean by a "point" of a line, and a "curve", and so on? is entirely devoted to the basic words that we use in physics.

So, as I say, St. Thomas -- in this same passage, Lesson I of *Philosophy*, first of all, but the basic words that we use in physics. *Physics*, Book 2, where he says that nature doesn't have to be demonstrated. Everyone knows this, but this does not mean that we have distinct knowledge of nature. And that's where science comes in. We want further -- more and more distinct knowledge of it. But this does not dispense -- in this we do not dispense with the original vague knowledge. Then he goes on to say it's like a blind man who would like to discuss colors. Of course, the physicist will tell you that the blind man can discuss colors in terms of angles of refraction, but if it comes to colors as we see them with the eye, and the proper sensibles, you can't talk about colors. Oh, of course you can. You can talk about them, but he doesn't know what he's talking about. .... They're only using words, and this you know is possible. A blind man can say "red". He can do this. Well, philosophers do this most of the time. Because usually a school consists of this. They erect a kind of vocabulary that the member of the school can manipulate in a grammatically correct fashion, without knowing what the terms actually refer to. This is what I read in this passage of St. Thomas. And the same thing is said in his commentary on *Ethics*. Of course -- young people can repeat the vocabulary of metaphysics, but ..... they don't understand the words that they are using, although they say them with their mouths.

Those of you who are somewhat familiar with the vocabulary of the scholasticism after the 13th Century will know what I'm talking about. There is very little desire to go back to primitive meanings of words. Whereas this is a chief preoccupation in all

of Aristotle. Take for instance Book 5 of the Metaphysics. It is entirely devoted to the basic words that we use -- not just in philosophy, first of all, but the basic words that we use in common speech, in ordinary language. What do you mean by a beginning? What do you mean by a cause? What do you mean by an element? Or by a part, or by a whole, or by a power, and so on? And he always leads you back to the word in common usage. According to the general principles which St. Thomas formulates and he repeats merely from Aristotle, "*nominibus utendum est ut ~~ut~~ <sup>gloriatur</sup>*", we must use words as they are used by the many.

It is also interesting to observe how little <sup>after St.</sup> Albert and St. Thomas, the scholastic philosophers were concerned with what a word is. Notwithstanding the nominalists; Nominalism became possible because of all kinds of tacit assumptions concerning the nature of words, and concerning the nature of concepts, and concerning the relations between these. Nominalism was not -- what a name is, according to the nominalists, is his weakest point. Here

So, in proceeding the way that *Aristotle* would have us do, which St. Thomas criticized the way I said, there are certain basic notions which are known to all -- they are confused, and if you try to demonstrate them, you're merely eliminating them all together. Obfuscating them entirely. If we do not proceed from, say, confused knowledge gradually toward more distinct knowledge, we will be putting the cart before the horse. And the first thing, we'll forget about the horse, and then the cart will go nowhere.

What exactly is a word? Well, it is defined in Aristotle as a sound, a vocal sound that signifies by convention. And this word is distinguished from, say, the bark of a dog, or the screeching of the bat. These are pure animal sounds, or as we sometimes proffer

animal sounds, too, when we scream. And these are all animal sounds, but they do not signify by convention. A dog when he barks signifies naturally that he is content or that he is angry, whereas our speech, inasmuch as it is human, as that of the rational animal, signifies by convention. Signifies what? Well, signifies things as we know them, in the mode in which we know them. And of what do they signify first? The thing that we first know. Thus we get the first meanings of things, and these are the most basic because all other meanings are going to depend upon these. Now there are all kinds of distinctions that have to be made about this because for instance our ~~etymologies~~ <sup>etymologies</sup> ~~now~~ are often false, but as long as we can show some basic meaning of the word that we can verify, especially in sensation, we've got the word, and then we can start adding onto it new words, and using it freely as the poet will do.

Now, if what the words first signify are things as we first conceive them, and if things as we first conceive them are not very distinctly known, then the first meanings of words -- that is, they will be themselves somewhat vague. The first meanings belong to ordinary language. The first meanings of words. To common language. What do you mean by a tree? Well, there is one. What do you mean by a horse? There is a horse. What do you mean by high? Well, this high. Of course, there are higher things than that. You know, all of these things. What do you mean by all of them? Well, I mean, all three. If there were only two, I wouldn't say they're all here. If there were only two, I'd say they were both here. These are basic distinctions that we know somehow spontaneously.

Now, the poets become aware of the inner ~~wealth~~ wealth of what a word stands for, and this is what is characteristic, I think, of the poet -- that he is aware of the wealth of meaning of words in ordinary language. You -- he can talk to us, the poet, because the materials he constructs with are already known. That's why he can talk to us if he is a real poet. He can use words that everybody knows, and do magic with them. By arrangements, *he. 192. make* a metaphor, which is the most powerful instrument of the poet, and I will give you a simple example of a metaphor, and you will feel the power of the metaphor. It's a metaphor that you all know. That's why I'm going to give it. And then a new arrangement, this initiative of the poet, with ordinary meanings, shows new light on what we already knew, and delivers us at the same time of the obscurity of what we already knew. It has been said that the poet is a person -- we're going to move from ordinary language -- we're going to move to poetry and from there we'll go on further, and show that there must remain a great intimacy between the man using ordinary language, the poetry expressed by genius, and the vocabulary of the philosopher. That's why Aristotle insisted so much that before undertaking anything else, if one is to acquire ~~poetry~~ <sup>poetics</sup> one must know poetry well. For instance, it's absurd to read Aristotle's poetics, without having read poetry. But that's what people usually do. Aristotle constantly gives examples taken from especially Homer and from Sophocles -- yes, but he supposed that the people to whom he was talking had read this stuff and knew it practically by heart -- which in fact they did, especially Homer. For some reason or other I am constantly running ahead of what I want to say. That's because of what I see in your eyes, and I want to put a hitching post out there.

Now, it has been said that the poet is a person in love with words. I think it's ..... who said that. I think it's very true. That is materially it's true. For he does not love words for themselves, but what words stand for and with how they can be put to use to make them living voices, the words themselves -- living voices. To render the word incantatory, as it were. Do you have that word in English? Yes. ....nuance. .... What we are concerned with right now is that the poet cannot afford to abandon ordinary meanings. He cannot afford to become so elusive that every line <sup>he</sup> speaks calls for a tome of commentaries without which the line has no meaning. Without which the line itself remains mute. That's not good poetry. No matter what the poets themselves say about this kind of poetry when they're writing poems to one another. Well that's all right, but they should retire from the ordinary human sphere. It's like the musicians with ..... If they like it, let them listen to it. But don't impose it upon us. And they can't complain if we somehow do not feel inclined to follow them or become ecstatic about their noises, no matter how mathematically correct and well proportioned they might be; they do not necessarily suit the human ear. The human ear is not exactly infinite in that sense. It is infinite but not in that sense. That is, <sup>that</sup> you can twist it in all directions. No more than the nose. Our ears are just as determinate as our noses in that respect. You can't twist them just any way. In mind, yes. All the noses that I can imagine. As large, as warped as you wish. But who's interested in that. It shows our poetic faculty in the original sense of *the poets*.

What are we concerned with here? So we can't afford to abandon ordinary meaning. And you all know that the finest poetry every

written sticks to simple terms. Terms that everyone knows. There is not a savant word in good poetry. A learned word. No. There are canons in Shakespeare, but canon was not a learned word in his time. And what did he do with the cannon? He had it spew forth its iron bowels or something like that. Everyone understood that. This is just another way of saying that the poet must abide with the wellsprings that remain hidden in ordinary speech. And when he poeticizes he must remain direct, by referring, by using these words, and they have an extraordinary wealth. Just think of the word "animal". Or the word "nature". What it all causes. And the poet is the first one to take initiative with respect to these words. Now, poetry, St. Thomas said, ..... poetry is about those things which, by reason of their falling short of truth, that is, of complete obviousness and of complete truth, cannot be grasped by reason, and therefore ..... and because of this reason must be seduced by certain similitudes, that is by images, by metaphors, and so on. And these will bring to light something that is within itself inevitable. That's why we can say, on this basis of this very proposition of Thomas here, that the poet gives voice to things that cannot speak of themselves. But they are given the voice, in the words, by the combination of words. For instance, now is the winter of our discontent, turned glorious summer by this sun of York. The winter of our discontent. Just think of that. Everyone knows what a winter is. Well, we know up in Quebec. I can assure you of that. The winter, and discontent. Everyone knows what discontent is. This is what the poet supposes. Now, what does the poet do? The winter of our discontent. That's his initiative. And everyone understands this

166: "Rumor is a pipe" in Dist. to Henry IV

again. This is his contribution, and it is a formidable one. It expresses our discontent. But by calling it winter. To show you an example in Shakespeare or Sophocles or Homer, <sup>Sister</sup> Mr. ....  
a fine one in/..... <sup>Sister</sup> who sticks to ordinary language. I never saw a learned word in your poetry, Sister. And that's why I understand it, I think. [ As I have already said, St. Thomas insisted that poetry be taught before philosophy. The mind must acquire a kind of refined determination before stepping into the field of strict science. This is necessary. Else the field of science itself will soon become empty. And the words of a cavalier de force will soon become empty. Not that it is based on poetry, but it's the mind that poetry has shaped, that must use the words, and will use them wisely if it has this shape. So I do not say that the philosopher uses words and the poet uses them too, and in this respect they're the same. Oh, sure, sure, but this is confusing. No. I'm talking about the quality of the mind acquired by a non-poet. Not all people have to become poets. This is impossible. A poet is a genius. .... But one can become an orator, but one cannot become a poet. You have to be born a poet. Nevertheless, although everyone is not born a poet, everyone ought to know poetry, which is something different. And the shape of our mind will depend upon the formation acquired by reading poetry intelligently, under the guidance of a competent person.

And then of course, from there, moving on to rhetoric. There are many reasons for this -- why the mind should receive a poetic formation before receiving, say, a rhetorical one, or one in scientific logic, that is logic that leads to scientific knowledge,

Modelive  
certainly



as the instrument of scientific knowledge. But the one -- there are many psychological reasons why poetry should be taught to the young, that all children should get a great deal of good poetry. You have nothing to complain about. In the English language you have your Shakespeare, and you have others, too, but even if you had only Shakespeare, my heavens -- if he were only taught. If we could only oblige our children to recite this type of poetry, even if they don't understand it, it isn't even important that they do not understand it entirely -- because if you understand poetry completely, it's no longer poetry -- ..... you must be seduced by extrinsic means, such as metaphor. Nothing can replace a good metaphor. Never. In poetry. In theology it's possible, but not in poetry.

I say, there are many psychological reasons for this but the one we are concerned with right now has nothing to do with the psychology of youth. It is that both poet and philosopher use words whose first meanings are commonly known. This is the important point right now. Winter is winter, and discontent is discontent. But the writer -- the winter of our discontent -- that is known as soon as the poet has said it. I just said this all. I forgot. There is an initiative that the words and meanings do not take of themselves. The poet is a maker and also a midwife. He brings the winter and the discontent together. And in doing so he somehow produces in us a catharsis and ..... as a midwife, although I would not like to go back to the original meanings of these words and bring them together! He can put the ..... world ablaze. Sometimes quite noiselessly, and make us understand what we had never seen before, or never seen that way. This is a contribution.

Now of course, we could go on for some time on the subject of the catharsis which I've just mentioned, but I heard the bell and I'll stop and follow the rules. What we do now, is stop for a few minutes, and you discuss among yourselves and then we'll get together and you can question me as you will. We discussed poetry today. Tomorrow we'll get to philosophy, and the next day the sciences.

-----

Only Copy

-2-

(Two other lectures to follow directly.)

Lecture #2

Name of Lecturer: DR. CHARLES DeKONINCK

Title of Lecture: SCIENCE & THE HUMANITIES IN THE 19th CENTURY

Date: August 14, 1962

...when it comes to reality. ...  
...I don't know too well where we left off yesterday. Oh, it's  
Page 1. Yeah, I see. We said yesterday that poetry -- and even  
before poetry of course, grammar, and I hope I insisted on grammar  
sufficiently. It's the most basic of all disciplines. One thing  
I did not mention is this: that, as we all know, there is something  
irrational about grammar. English grammar for instance is the most  
irrational grammar that I know of. As a matter of fact, I never  
had an opportunity to learn or to study English grammar. I always  
asked for English grammar, and they said "Well, we have none."  
I asked this of English scholars. We have to learn as we go on.  
There is French grammar -- there is some of it, yes. But to get  
grammar really, you have to go back to the classical languages.  
I know a certain number of philologists and linguists, and they  
all insist that if you are going to learn grammar, learn Latin,  
or Greek or both, and from there on move into your own language  
in this grammatical way. Oh, yes, we were talking about the irra-  
tionality of that. It is good that from the beginning we be aware  
that in this life things are not completely rational, as the first  
thing you learn when you study grammar with all the exceptions,  
and all the certain forms, certain expressions, certain declen-  
sions, certain conjugations -- they're not completely rational.  
They never are. If they're rational to you, that's because you  
see rationality where there is none. It's something of your own  
doing. And this is good, I think. It would be very dangerous  
to start off, say, computation, thus be faced with a sheer ra-  
tionality from the very beginning, because I think this would

determine a false outlook on life for the future. Which is the case of many mathematicians, <sup>sometimes turn out to be</sup> who ~~are~~ the most irrational creatures on earth when it comes to reality. I don't want to <sup>belittle</sup> ~~annoy~~ mathematicians, because I like mathematics myself, but it is remarkable how one can be proficient in the art of calculation especially. I do not say in the mathematical science in the strict sense of the word, in which, say, Euclid took it. But the art of computation, which goes through elementary computation through algebra, through calculus and so on. One can be extremely proficient in this field, and yet, have a very formless mind in all other respects. I'm sure some of you had this experience. Well, I'll take it on myself.

We insisted on the wealth of ordinary language. That is to say, a beginning for poetry. And the philosopher too uses ordinary language. Or ought to. Up to a point at least. But as he observes that words are used for different meanings, that is, intending different things, he must bring this out very explicitly. When he talks, he should say "now, the word that we're going to use, such as -- let me take a favorite contemporary example 'being' --" He should start out by saying, "The word 'being' whether you take it as a noun or as a verb has about 50 different meanings.", which is most disagreeable for the existentialists who assume that it has only one meaning. But it has so many different meanings, so you must try to lay down the particular meaning that you are concerned with here. For instance, it means one thing in Socrates "Socrates is a husband, <sup>or</sup> ~~is~~ Socrates is a relative of such and such a person by blood. Socrates is 5 1/2 feet tall. Socrates weighs 200 lbs. and so on and so on." In all this, "is" is involved, but it means something different in each instance. When you say the equilateral triangle exists, that's one meaning of existence. When you say

Socrates exists, that's another meaning. And a very different one. And if you say "Nothing is nothing." -- that's still a different meaning. You should be aware of it. But we'll get to some classical examples in a moment. The one that I just gave is, I think, a relevant one, inasmuch as ~~this~~ <sup>the</sup> assumption is ~~around~~ <sup>that</sup> there is a privileged meaning of the word "existence", and of course there is, if you speak of an existence that is identical with what the thing is that exists, and that of course is the privilege of God. In that sense. But let's get confused for a while. We'll take these things up later, in the true sense.

Now, it is the business of the philosopher to be explicitly aware of this. Of the fact that words, some words, and the key words in philosophy have each severally many meanings. And he must try to detect the relatedness of these different meanings. They are not just utterly different, as in the word "seal" for instance - to signify the animal, or ~~sea~~ <sup>such</sup> to signify the seal which is on an envelope, ~~for instance~~ <sup>here</sup>. A word has two meanings utterly by chance. But I mean words that have two meanings by design -- by design which is not ~~necessary~~ <sup>necessity</sup> established or convened upon in a public reunion. No. Somehow, spontaneously, as a language develops, a word acquires a new meaning, and there is a reason why this new meaning is new with respect to the previous one, and yet related to it. It somehow grows from an earlier meaning. He must try to detect the relatedness of these diverse meanings, and see how a single word grows and proliferates in diverse directions. Take for instance the Greek word "logos". It has a large number of meanings. ~~Included among the most difficult words to translate, ever.~~ The original meaning is just the spoken word -- ~~the sound that is produced in speech.~~ <sup>the basic part of</sup> ~~the word.~~ That's the first meaning. Then it goes on to mean, that which we express

logos

by means of words. But notice, this ~~logos~~ already has two very distinct meanings, ~~but they're~~ <sup>though</sup> not unrelated. Here is what I say -- you hear what I say -- that is, you hear the voice, and this voice is a significant one; and when I say significant, <sup>I mean (?)</sup> it is meaningful. It means something. Now, what it means -- what this sound stands for by convention, that is also called word. You call it the mental word. And so on. Finally, logos can mean the definition of something, that is, the explicitation of what I say. When I say "circle" for instance, then I define circle, well, the definition will be called logos too. It's a different meaning again. Then logos could mean the ~~annunciation~~ <sup>enunciation</sup>; it could mean the rule; it could mean the proportion; it could mean so many things. And when you use a word, you ought to make it clear at least by the context, in which sense you are using it. Same for the word phusis which we'll see in a moment -- that is, nature.

Now why is ordinary language so important? The words I've used so far are in current usage, such as the word "word"; and the word "definition". You limit something -- set something off from other things. The word "nature" is also in current use. Now why should ordinary language, ~~ordinary language~~ be so important to the philosopher? What does a word express? How do we know the things that we express in ordinary language? How do we come to know them? For instance, take the word -- I'll take scholastic terms <sup>ones</sup> because these are the/which have been so abused of -- of which there has been so much abuse in the period immediately preceding the renaissance, and which went on through the renaissance. Take the word "matter". What does the word "matter" mean? I think last year at Notre Dame, they had a whole symposium -- a vast symposium

I should say, seeing the results which amounted to a stack of pages this thick, on what matter is or what matter means or what it stands for. I didn't read it, but I know from the dictionary what the word "matter" meant first in the Latin, and what the word "*hulē*..." first meant in Greek. Now, if you talk to a scholastic and use the word "matter", oh, yes, of course -- if this man who's talking to me really knows philosophy -- well, of course, matter means prime matter. It does like fun. Prime matter is a very late imposition. Matter first of all, in Greek, meant wood. Wood cut down. Not just wood. It did mean that too. But, wood cut down. And then wood cut down either for burning or for building. It meant timber. It meant lumber. ~~Then, it finally -- and then this --~~ Here we get a more concrete idea of what the word stands for -- what the word stands for is something more concrete -- something we can grasp better. Lumber is so much more intelligible than wood, because lumber means wood considered with respect to building, and we do the building, and we need building materials. Our practical conceptions on the whole are much closer to us. Why? Because actually they come out of our own heads. But wood in nature is something very mysterious. Those trees out there -- not even a botanist knows exactly what a tree is, and if he says he does, don't believe him. Ask another botanist. And you'll find out that what we know about trees doesn't go that far. But we know what lumber is. Of course it's wood -- but forget about the wood. It's a convenience -- convenient stuff for building. Building material. And finally, all building materials were called *hulē*, and in latin, ~~matter~~ <sup>materia</sup>, which The evolution of the term was the same. And finally, the more general meaning of matter was -- whatever anything was made of. Whatever it may be. Even a syllogism has its matter. The terms

gave us  
the  
word  
matter

of the syllogism are the elements of the syllogism so to speak, they are the matter of the syllogism. But notice how this word changes meaning all the time. All along. And where does prime matter come in? ~~Way~~ at the end, because it's something that's known with great difficulty. It's something that's difficult to know -- that there is such a thing as what we finally call prime matter. ~~We can't possibly know it directly. We can't possibly demonstrate it.~~ All we can do is manifest it, and manifest it through examples. Examples ~~which somehow~~ <sup>thanks to</sup> in which we see a proportion between, say, the shape of a wooden block, and the wood of the wooden block, on the one hand, ~~and this is called an exemplum~~ and on the other hand, that by reason of which a thing is <sup>the</sup> kind of thing that it is, and ~~it is of some~~ <sup>that's what it is made of</sup> ~~thing~~ <sup>it is</sup> made of something, ~~that is~~ the way a wooden block is made of wood, ~~and a man is composed of that by reason of which he is a man, and that~~ <sup>made of something</sup> ~~that by reason of which he is a man is not the man -- there's something else. That something else -- that is~~ <sup>partly</sup> the material. The ultimate material. But this requires long discourse to make this plain. I mean, Aristotle spent a whole book on it. The first book of <sup>the Physics</sup> ~~is~~ <sup>is</sup> ~~entirely~~ devoted to this <sup>among other things, to this ultimate material</sup> ~~point, and then finally he arrives at the~~ <sup>alterior</sup> ~~position~~ first matter. But it was very far from what was originally called matter. What was originally called matter -- or rather what matter originally meant -- that is very important -- that must be retained throughout. Else you wind up with a vocabulary that's up in mid-air, and with a prime matter that exists only in the printed word of textbooks. And hardly even that, because it will be a word that is not truly a word. It will just have the air of a word. Because words ought to have a meaning. And <sup>their</sup> ~~air~~ has no meaning.



Another word is of course "eidos" or "form". Now what does form mean to a scholastic today, <sup>i.e., the kind</sup> where a scholastic who has entirely lost his moorings in nature and who lives in a vocabulary, much as many modern philosophers do today; <sup>the latter</sup> they are the true successors of the scholastics that I referred to yesterday. I'll name some in due course. This other word is "eidos". Well, what does that mean first of all. It simply means the shape of a thing -- of a sensible thing. The shape of a horse. The outline of a horse. ~~That's~~

~~"....." And sometimes you will call it "....." "....." is you~~  
~~But the~~ <sup>can be seen to be</sup> ~~consider this a shape~~ that by reason of which you come to know somewhat extrinsically what a horse is. We distinguish horses from cows primarily from their shapes, not by their color. Sure. That's what it means first of all. Now, because the shape of a thing is an indication of <sup>the</sup> kind of a thing that it is, you <sup>may</sup> extend the word "shape" to mean, say, the intrinsic shape of a thing. That by reason of which this external shape is. The external shape is what St. Thomas calls a proximate sign of the nature of the thing. It is not the nature of the thing, but it is a sign of the nature of it. Then, that which this <sup>external</sup> shape signifies -- that is called "eidos" too. That's a new imposition altogether.

In your libraries you surely have Liddle & Scott, <sup>or</sup> ~~in~~ the Greek Lexicon, <sup>will</sup> ~~and~~ look up a good Latin dictionary and you see all these meanings. They're not typically <sup>technical</sup> philosophical at all. ~~The philosophical meanings which are -- which you will find.~~ Every word that Aristotle ever wrote, every term that he ever used in a special way, you will <sup>actually</sup> find recorded in Liddle & Scott.

Take, say, the word "order". There's another word. Let's take "kosmos" - the Latin "ordo". What do we mean by order. It's

kind of vague, yes, but order first had a very concrete meaning.

It was a term of weaving, where you have a certain pattern. It

was a very pragmatic meaning in the beginning. That's where ordo

comes from. Look this up, especially in ~~..... and .....~~

the Dictionnaire ~~.....~~ *etymologique de la langue latine*, by Ernout et Meillet, a sort of

~~Well, you should look up his~~ Chronological Dictionary of the Latin Language; ~~and~~ look up all these ~~words~~ <sup>other</sup> as well, there

"nature" and so on. It's really marvelous how they can be brought down to very concrete meanings, first of all. And what is remark-

able, Aristotle and St. Thomas, of all philosophers, were always <sup>already</sup>

most concerned with the origin of a word, with an earlier imposi- <sup>and is, too, Plato - at least in his *Cratylus*, which is wholly concerned with</sup> tion,

Now, in St. Thomas for instance, the etymologies were often <sup>utterly false. He takes them from "....." or "....." where</sup>

for instance, you will find "lapis" -- the etymology of lapis will

go back to ~~.....~~ to hurt the

foot. It's not true etymology. It has nothing to do with foot

hurting at all. But as a matter of fact, it's very interesting.

Why? Because at least we get down to something concrete. You

stumble over a stone and you hurt your foot. Now, it's getting

down to something concrete that is important. The <sup>historical</sup> truth is not

<sup>in no way so</sup> utterly important here.

We'll come to the matter of truth in a moment, when I show

that sometimes a "false" example is far better than a true one.

<sup>Many</sup> of the examples in St. Thomas are "false", and Aristotle too.

Deliberately so. We'll see in a moment. (We'll have to see an

awful lot of things the way we're going.)

But take another word -- "whole" and "part". Now these terms

severally have diverse meanings, and it is amusing to see modern

..... and if you're

philosophers in mathematics play with these words, unaware of the fact that they have so many different meanings. As when they say for instance that there are parts which are [far -- that utterly several <sup>(with?)</sup> equal/what the whole. One example would be -- you have a series of integers, and then a series of even numbers, and there are as many even numbers as there are integers. Now the series of even numbers is part of the series of integers; therefore, they say, since we can establish a 1 to 1 correspondence <sup>(between the ?)</sup> in terms of these two series, there are as many equal or even numbers as there are integers. And therefore the part, which is only half of this whole, is equal to the whole. Now that's amusing for children, but for serious people! Because if you take your even numbers out of your series, then you have this upper series with odd numbers. So you had two equal series there. I'd say that the series of integers is twice as big as the even numbers. If you play the game fairly. But if you throw around, if you're just depending on what you can put down here severally, and call these integers, and these down here even numbers, of course you can have as many as you want. I can have an infinity -- infinite series of twos. I can say there are as many twos as there are integers. This two over here, and this two over here, and this two over here. And how many twos can I have? As many as I wish. Now, this is all truth. Right? Let's call it two. I think two is equal to the series of integers. And I can find even more silly paradoxes than that? But we don't have the time.

It's just ~~the point is,~~ that when you talk of "part" you should be aware that it has diverse meanings. Is it a part universally taken, is it a part taken particularly. Is it, say, a physical part; is it a logical part; if it is a logical part, and if you're

*you should remember that*  
speaking of a logical whole and a logical part, then ~~the~~ the logical universal, ~~now~~ say, animal, is a whole that is in each of its parts, wholly. When I say man is an animal, well the universal animal, is said of man. As a matter of fact, you can say it of me. I am an animal. Right? Now, animal signifies as a whole. But parts are subjective parts. That of which this whole is said. Now, in the saying, the whole is identified with the parts ~~not~~ *though* in such a way that it cannot be identified with another one. So you have something ~~that is~~ one that can be identified with many. Severally.

*A good definition  
George  
Myford  
Duncan's  
notes;  
the  
is a  
wise?*  
So "whole" is a very equivocal term. The same thing with "Part", and the same with "genus" and "species". This word "genus" no longer exists -- hardly exists in treatises on natural history. (1)  
The word was used for a long time. It's used less and less now. It seems to have become a term which you find only in scholastic textbooks today. And it is precisely one of these terms that can be burnt, as I said yesterday. Why? Because we forget where it comes from. Genus, unfortunately the English language had to take it over from the Latin term, but genus actually means a race. The human race, or a certain race of cows; a certain type of cows; say Jersey cows. This is a genus. And first of all it has a natural meaning, and then much later, the imposition was changed to mean, some type of universality. Something is predicable as a genus. Say figure is predicable of triangle and circle, as a genus. Whereas equilateral triangle is predicable only of individuals. And equilateral is species, and so on. But species -- now where did this come from? It's important to lead this back to some original meaning so that we can verify. A species is a fair translation of either "εἶδος," or "ιδέα." It means something narrower than the race. It means a certain type within the race, differing

within that same race, from certain other types. But earlier, something that is recognizable, the "~~ed~~os" or the "species", or the "exp<sup>ensive</sup> shape" on the "....."

Now, already in ordinary language, several levels of meanings are established spontaneously as it were, by the people. The philosophers, especially the great philosophers such as Plato and Aristotle -- they have no technical vocabulary. There is perhaps one word in Aristotle that is "~~.....~~" which looks <sup>a</sup> technical, <sup>1)</sup> ~~the word entelechia, which comes into the definition of the soul, and also in that of motion,~~ but actually to a Greek <sup>(it)</sup> would have been very, very plain -- to the Greek in the street it would have been very, very plain. <sup>(1)</sup>

<sup>On this</sup>  
<sup>red, see</sup>  
<sup>very</sup>  
<sup>2</sup>  
<sup>in physics</sup>  
<sup>translating</sup>  
<sup>the</sup>  
<sup>legends</sup>  
~~He puts an abstract "ea" at the end of truth well known, meaning it can be translated:~~  
actuality. Now, for instance, if we say "act" - then you say "actual". Now these words are around. Then you add "ity" to it. Then you create an abstract term, but everybody immediately understands what this means. That's about the only term that I know of in Aristotle. ~~Even~~ <sup>Even</sup> the names that he gave to fishes and to the beasts that he knew, he always took them from the fishermen. Gave them the names that the people used to signify these things clearly. <sup>(2)</sup>

<sup>7</sup>  
<sup>see</sup>  
<sup>metaphysical</sup>  
<sup>1</sup>  
<sup>2</sup>  
<sup>philosophy</sup>  
<sup>1</sup>  
<sup>2</sup>  
<sup>3</sup>  
<sup>4</sup>  
<sup>5</sup>  
<sup>6</sup>  
<sup>7</sup>  
<sup>8</sup>  
<sup>9</sup>  
<sup>10</sup>  
<sup>11</sup>  
<sup>12</sup>  
<sup>13</sup>  
<sup>14</sup>  
<sup>15</sup>  
<sup>16</sup>  
<sup>17</sup>  
<sup>18</sup>  
<sup>19</sup>  
<sup>20</sup>  
<sup>21</sup>  
<sup>22</sup>  
<sup>23</sup>  
<sup>24</sup>  
<sup>25</sup>  
<sup>26</sup>  
<sup>27</sup>  
<sup>28</sup>  
<sup>29</sup>  
<sup>30</sup>  
<sup>31</sup>  
<sup>32</sup>  
<sup>33</sup>  
<sup>34</sup>  
<sup>35</sup>  
<sup>36</sup>  
<sup>37</sup>  
<sup>38</sup>  
<sup>39</sup>  
<sup>40</sup>  
<sup>41</sup>  
<sup>42</sup>  
<sup>43</sup>  
<sup>44</sup>  
<sup>45</sup>  
<sup>46</sup>  
<sup>47</sup>  
<sup>48</sup>  
<sup>49</sup>  
<sup>50</sup>  
<sup>51</sup>  
<sup>52</sup>  
<sup>53</sup>  
<sup>54</sup>  
<sup>55</sup>  
<sup>56</sup>  
<sup>57</sup>  
<sup>58</sup>  
<sup>59</sup>  
<sup>60</sup>  
<sup>61</sup>  
<sup>62</sup>  
<sup>63</sup>  
<sup>64</sup>  
<sup>65</sup>  
<sup>66</sup>  
<sup>67</sup>  
<sup>68</sup>  
<sup>69</sup>  
<sup>70</sup>  
<sup>71</sup>  
<sup>72</sup>  
<sup>73</sup>  
<sup>74</sup>  
<sup>75</sup>  
<sup>76</sup>  
<sup>77</sup>  
<sup>78</sup>  
<sup>79</sup>  
<sup>80</sup>  
<sup>81</sup>  
<sup>82</sup>  
<sup>83</sup>  
<sup>84</sup>  
<sup>85</sup>  
<sup>86</sup>  
<sup>87</sup>  
<sup>88</sup>  
<sup>89</sup>  
<sup>90</sup>  
<sup>91</sup>  
<sup>92</sup>  
<sup>93</sup>  
<sup>94</sup>  
<sup>95</sup>  
<sup>96</sup>  
<sup>97</sup>  
<sup>98</sup>  
<sup>99</sup>  
<sup>100</sup>  
<sup>101</sup>  
<sup>102</sup>  
<sup>103</sup>  
<sup>104</sup>  
<sup>105</sup>  
<sup>106</sup>  
<sup>107</sup>  
<sup>108</sup>  
<sup>109</sup>  
<sup>110</sup>  
<sup>111</sup>  
<sup>112</sup>  
<sup>113</sup>  
<sup>114</sup>  
<sup>115</sup>  
<sup>116</sup>  
<sup>117</sup>  
<sup>118</sup>  
<sup>119</sup>  
<sup>120</sup>  
<sup>121</sup>  
<sup>122</sup>  
<sup>123</sup>  
<sup>124</sup>  
<sup>125</sup>  
<sup>126</sup>  
<sup>127</sup>  
<sup>128</sup>  
<sup>129</sup>  
<sup>130</sup>  
<sup>131</sup>  
<sup>132</sup>  
<sup>133</sup>  
<sup>134</sup>  
<sup>135</sup>  
<sup>136</sup>  
<sup>137</sup>  
<sup>138</sup>  
<sup>139</sup>  
<sup>140</sup>  
<sup>141</sup>  
<sup>142</sup>  
<sup>143</sup>  
<sup>144</sup>  
<sup>145</sup>  
<sup>146</sup>  
<sup>147</sup>  
<sup>148</sup>  
<sup>149</sup>  
<sup>150</sup>  
<sup>151</sup>  
<sup>152</sup>  
<sup>153</sup>  
<sup>154</sup>  
<sup>155</sup>  
<sup>156</sup>  
<sup>157</sup>  
<sup>158</sup>  
<sup>159</sup>  
<sup>160</sup>  
<sup>161</sup>  
<sup>162</sup>  
<sup>163</sup>  
<sup>164</sup>  
<sup>165</sup>  
<sup>166</sup>  
<sup>167</sup>  
<sup>168</sup>  
<sup>169</sup>  
<sup>170</sup>  
<sup>171</sup>  
<sup>172</sup>  
<sup>173</sup>  
<sup>174</sup>  
<sup>175</sup>  
<sup>176</sup>  
<sup>177</sup>  
<sup>178</sup>  
<sup>179</sup>  
<sup>180</sup>  
<sup>181</sup>  
<sup>182</sup>  
<sup>183</sup>  
<sup>184</sup>  
<sup>185</sup>  
<sup>186</sup>  
<sup>187</sup>  
<sup>188</sup>  
<sup>189</sup>  
<sup>190</sup>  
<sup>191</sup>  
<sup>192</sup>  
<sup>193</sup>  
<sup>194</sup>  
<sup>195</sup>  
<sup>196</sup>  
<sup>197</sup>  
<sup>198</sup>  
<sup>199</sup>  
<sup>200</sup>  
<sup>201</sup>  
<sup>202</sup>  
<sup>203</sup>  
<sup>204</sup>  
<sup>205</sup>  
<sup>206</sup>  
<sup>207</sup>  
<sup>208</sup>  
<sup>209</sup>  
<sup>210</sup>  
<sup>211</sup>  
<sup>212</sup>  
<sup>213</sup>  
<sup>214</sup>  
<sup>215</sup>  
<sup>216</sup>  
<sup>217</sup>  
<sup>218</sup>  
<sup>219</sup>  
<sup>220</sup>  
<sup>221</sup>  
<sup>222</sup>  
<sup>223</sup>  
<sup>224</sup>  
<sup>225</sup>  
<sup>226</sup>  
<sup>227</sup>  
<sup>228</sup>  
<sup>229</sup>  
<sup>230</sup>  
<sup>231</sup>  
<sup>232</sup>  
<sup>233</sup>  
<sup>234</sup>  
<sup>235</sup>  
<sup>236</sup>  
<sup>237</sup>  
<sup>238</sup>  
<sup>239</sup>  
<sup>240</sup>  
<sup>241</sup>  
<sup>242</sup>  
<sup>243</sup>  
<sup>244</sup>  
<sup>245</sup>  
<sup>246</sup>  
<sup>247</sup>  
<sup>248</sup>  
<sup>249</sup>  
<sup>250</sup>  
<sup>251</sup>  
<sup>252</sup>  
<sup>253</sup>  
<sup>254</sup>  
<sup>255</sup>  
<sup>256</sup>  
<sup>257</sup>  
<sup>258</sup>  
<sup>259</sup>  
<sup>260</sup>  
<sup>261</sup>  
<sup>262</sup>  
<sup>263</sup>  
<sup>264</sup>  
<sup>265</sup>  
<sup>266</sup>  
<sup>267</sup>  
<sup>268</sup>  
<sup>269</sup>  
<sup>270</sup>  
<sup>271</sup>  
<sup>272</sup>  
<sup>273</sup>  
<sup>274</sup>  
<sup>275</sup>  
<sup>276</sup>  
<sup>277</sup>  
<sup>278</sup>  
<sup>279</sup>  
<sup>280</sup>  
<sup>281</sup>  
<sup>282</sup>  
<sup>283</sup>  
<sup>284</sup>  
<sup>285</sup>  
<sup>286</sup>  
<sup>287</sup>  
<sup>288</sup>  
<sup>289</sup>  
<sup>290</sup>  
<sup>291</sup>  
<sup>292</sup>  
<sup>293</sup>  
<sup>294</sup>  
<sup>295</sup>  
<sup>296</sup>  
<sup>297</sup>  
<sup>298</sup>  
<sup>299</sup>  
<sup>300</sup>  
<sup>301</sup>  
<sup>302</sup>  
<sup>303</sup>  
<sup>304</sup>  
<sup>305</sup>  
<sup>306</sup>  
<sup>307</sup>  
<sup>308</sup>  
<sup>309</sup>  
<sup>310</sup>  
<sup>311</sup>  
<sup>312</sup>  
<sup>313</sup>  
<sup>314</sup>  
<sup>315</sup>  
<sup>316</sup>  
<sup>317</sup>  
<sup>318</sup>  
<sup>319</sup>  
<sup>320</sup>  
<sup>321</sup>  
<sup>322</sup>  
<sup>323</sup>  
<sup>324</sup>  
<sup>325</sup>  
<sup>326</sup>  
<sup>327</sup>  
<sup>328</sup>  
<sup>329</sup>  
<sup>330</sup>  
<sup>331</sup>  
<sup>332</sup>  
<sup>333</sup>  
<sup>334</sup>  
<sup>335</sup>  
<sup>336</sup>  
<sup>337</sup>  
<sup>338</sup>  
<sup>339</sup>  
<sup>340</sup>  
<sup>341</sup>  
<sup>342</sup>  
<sup>343</sup>  
<sup>344</sup>  
<sup>345</sup>  
<sup>346</sup>  
<sup>347</sup>  
<sup>348</sup>  
<sup>349</sup>  
<sup>350</sup>  
<sup>351</sup>  
<sup>352</sup>  
<sup>353</sup>  
<sup>354</sup>  
<sup>355</sup>  
<sup>356</sup>  
<sup>357</sup>  
<sup>358</sup>  
<sup>359</sup>  
<sup>360</sup>  
<sup>361</sup>  
<sup>362</sup>  
<sup>363</sup>  
<sup>364</sup>  
<sup>365</sup>  
<sup>366</sup>  
<sup>367</sup>  
<sup>368</sup>  
<sup>369</sup>  
<sup>370</sup>  
<sup>371</sup>  
<sup>372</sup>  
<sup>373</sup>  
<sup>374</sup>  
<sup>375</sup>  
<sup>376</sup>  
<sup>377</sup>  
<sup>378</sup>  
<sup>379</sup>  
<sup>380</sup>  
<sup>381</sup>  
<sup>382</sup>  
<sup>383</sup>  
<sup>384</sup>  
<sup>385</sup>  
<sup>386</sup>  
<sup>387</sup>  
<sup>388</sup>  
<sup>389</sup>  
<sup>390</sup>  
<sup>391</sup>  
<sup>392</sup>  
<sup>393</sup>  
<sup>394</sup>  
<sup>395</sup>  
<sup>396</sup>  
<sup>397</sup>  
<sup>398</sup>  
<sup>399</sup>  
<sup>400</sup>  
<sup>401</sup>  
<sup>402</sup>  
<sup>403</sup>  
<sup>404</sup>  
<sup>405</sup>  
<sup>406</sup>  
<sup>407</sup>  
<sup>408</sup>  
<sup>409</sup>  
<sup>410</sup>  
<sup>411</sup>  
<sup>412</sup>  
<sup>413</sup>  
<sup>414</sup>  
<sup>415</sup>  
<sup>416</sup>  
<sup>417</sup>  
<sup>418</sup>  
<sup>419</sup>  
<sup>420</sup>  
<sup>421</sup>  
<sup>422</sup>  
<sup>423</sup>  
<sup>424</sup>  
<sup>425</sup>  
<sup>426</sup>  
<sup>427</sup>  
<sup>428</sup>  
<sup>429</sup>  
<sup>430</sup>  
<sup>431</sup>  
<sup>432</sup>  
<sup>433</sup>  
<sup>434</sup>  
<sup>435</sup>  
<sup>436</sup>  
<sup>437</sup>  
<sup>438</sup>  
<sup>439</sup>  
<sup>440</sup>  
<sup>441</sup>  
<sup>442</sup>  
<sup>443</sup>  
<sup>444</sup>  
<sup>445</sup>  
<sup>446</sup>  
<sup>447</sup>  
<sup>448</sup>  
<sup>449</sup>  
<sup>450</sup>  
<sup>451</sup>  
<sup>452</sup>  
<sup>453</sup>  
<sup>454</sup>  
<sup>455</sup>  
<sup>456</sup>  
<sup>457</sup>  
<sup>458</sup>  
<sup>459</sup>  
<sup>460</sup>  
<sup>461</sup>  
<sup>462</sup>  
<sup>463</sup>  
<sup>464</sup>  
<sup>465</sup>  
<sup>466</sup>  
<sup>467</sup>  
<sup>468</sup>  
<sup>469</sup>  
<sup>470</sup>  
<sup>471</sup>  
<sup>472</sup>  
<sup>473</sup>  
<sup>474</sup>  
<sup>475</sup>  
<sup>476</sup>  
<sup>477</sup>  
<sup>478</sup>  
<sup>479</sup>  
<sup>480</sup>  
<sup>481</sup>  
<sup>482</sup>  
<sup>483</sup>  
<sup>484</sup>  
<sup>485</sup>  
<sup>486</sup>  
<sup>487</sup>  
<sup>488</sup>  
<sup>489</sup>  
<sup>490</sup>  
<sup>491</sup>  
<sup>492</sup>  
<sup>493</sup>  
<sup>494</sup>  
<sup>495</sup>  
<sup>496</sup>  
<sup>497</sup>  
<sup>498</sup>  
<sup>499</sup>  
<sup>500</sup>  
<sup>501</sup>  
<sup>502</sup>  
<sup>503</sup>  
<sup>504</sup>  
<sup>505</sup>  
<sup>506</sup>  
<sup>507</sup>  
<sup>508</sup>  
<sup>509</sup>  
<sup>510</sup>  
<sup>511</sup>  
<sup>512</sup>  
<sup>513</sup>  
<sup>514</sup>  
<sup>515</sup>  
<sup>516</sup>  
<sup>517</sup>  
<sup>518</sup>  
<sup>519</sup>  
<sup>520</sup>  
<sup>521</sup>  
<sup>522</sup>  
<sup>523</sup>  
<sup>524</sup>  
<sup>525</sup>  
<sup>526</sup>  
<sup>527</sup>  
<sup>528</sup>  
<sup>529</sup>  
<sup>530</sup>  
<sup>531</sup>  
<sup>532</sup>  
<sup>533</sup>  
<sup>534</sup>  
<sup>535</sup>  
<sup>536</sup>  
<sup>537</sup>  
<sup>538</sup>  
<sup>539</sup>  
<sup>540</sup>  
<sup>541</sup>  
<sup>542</sup>  
<sup>543</sup>  
<sup>544</sup>  
<sup>545</sup>  
<sup>546</sup>  
<sup>547</sup>  
<sup>548</sup>  
<sup>549</sup>  
<sup>550</sup>  
<sup>551</sup>  
<sup>552</sup>  
<sup>553</sup>  
<sup>554</sup>  
<sup>555</sup>  
<sup>556</sup>  
<sup>557</sup>  
<sup>558</sup>  
<sup>559</sup>  
<sup>560</sup>  
<sup>561</sup>  
<sup>562</sup>  
<sup>563</sup>  
<sup>564</sup>  
<sup>565</sup>  
<sup>566</sup>  
<sup>567</sup>  
<sup>568</sup>  
<sup>569</sup>  
<sup>570</sup>  
<sup>571</sup>  
<sup>572</sup>  
<sup>573</sup>  
<sup>574</sup>  
<sup>575</sup>  
<sup>576</sup>  
<sup>577</sup>  
<sup>578</sup>  
<sup>579</sup>  
<sup>580</sup>  
<sup>581</sup>  
<sup>582</sup>  
<sup>583</sup>  
<sup>584</sup>  
<sup>585</sup>  
<sup>586</sup>  
<sup>587</sup>  
<sup>588</sup>  
<sup>589</sup>  
<sup>590</sup>  
<sup>591</sup>  
<sup>592</sup>  
<sup>593</sup>  
<sup>594</sup>  
<sup>595</sup>  
<sup>596</sup>  
<sup>597</sup>  
<sup>598</sup>  
<sup>599</sup>  
<sup>600</sup>  
<sup>601</sup>  
<sup>602</sup>  
<sup>603</sup>  
<sup>604</sup>  
<sup>605</sup>  
<sup>606</sup>  
<sup>607</sup>  
<sup>608</sup>  
<sup>609</sup>  
<sup>610</sup>  
<sup>611</sup>  
<sup>612</sup>  
<sup>613</sup>  
<sup>614</sup>  
<sup>615</sup>  
<sup>616</sup>  
<sup>617</sup>  
<sup>618</sup>  
<sup>619</sup>  
<sup>620</sup>  
<sup>621</sup>  
<sup>622</sup>  
<sup>623</sup>  
<sup>624</sup>  
<sup>625</sup>  
<sup>626</sup>  
<sup>627</sup>  
<sup>628</sup>  
<sup>629</sup>  
<sup>630</sup>  
<sup>631</sup>  
<sup>632</sup>  
<sup>633</sup>  
<sup>634</sup>  
<sup>635</sup>  
<sup>636</sup>  
<sup>637</sup>  
<sup>638</sup>  
<sup>639</sup>  
<sup>640</sup>  
<sup>641</sup>  
<sup>642</sup>  
<sup>643</sup>  
<sup>644</sup>  
<sup>645</sup>  
<sup>646</sup>  
<sup>647</sup>  
<sup>648</sup>  
<sup>649</sup>  
<sup>650</sup>  
<sup>651</sup>  
<sup>652</sup>  
<sup>653</sup>  
<sup>654</sup>  
<sup>655</sup>  
<sup>656</sup>  
<sup>657</sup>  
<sup>658</sup>  
<sup>659</sup>  
<sup>660</sup>  
<sup>661</sup>  
<sup>662</sup>  
<sup>663</sup>  
<sup>664</sup>  
<sup>665</sup>  
<sup>666</sup>  
<sup>667</sup>  
<sup>668</sup>  
<sup>669</sup>  
<sup>670</sup>  
<sup>671</sup>  
<sup>672</sup>  
<sup>673</sup>  
<sup>674</sup>  
<sup>675</sup>  
<sup>676</sup>  
<sup>677</sup>  
<sup>678</sup>  
<sup>679</sup>  
<sup>680</sup>  
<sup>681</sup>  
<sup>682</sup>  
<sup>683</sup>  
<sup>684</sup>  
<sup>685</sup>  
<sup>686</sup>  
<sup>687</sup>  
<sup>688</sup>  
<sup>689</sup>  
<sup>690</sup>  
<sup>691</sup>  
<sup>692</sup>  
<sup>693</sup>  
<sup>694</sup>  
<sup>695</sup>  
<sup>696</sup>  
<sup>697</sup>  
<sup>698</sup>  
<sup>699</sup>  
<sup>700</sup>  
<sup>701</sup>  
<sup>702</sup>  
<sup>703</sup>  
<sup>704</sup>  
<sup>705</sup>  
<sup>706</sup>  
<sup>707</sup>  
<sup>708</sup>  
<sup>709</sup>  
<sup>710</sup>  
<sup>711</sup>  
<sup>712</sup>  
<sup>713</sup>  
<sup>714</sup>  
<sup>715</sup>  
<sup>716</sup>  
<sup>717</sup>  
<sup>718</sup>  
<sup>719</sup>  
<sup>720</sup>  
<sup>721</sup>  
<sup>722</sup>  
<sup>723</sup>  
<sup>724</sup>  
<sup>725</sup>  
<sup>726</sup>  
<sup>727</sup>  
<sup>728</sup>  
<sup>729</sup>  
<sup>730</sup>  
<sup>731</sup>  
<sup>732</sup>  
<sup>733</sup>  
<sup>734</sup>  
<sup>735</sup>  
<sup>736</sup>  
<sup>737</sup>  
<sup>738</sup>  
<sup>739</sup>  
<sup>740</sup>  
<sup>741</sup>  
<sup>742</sup>  
<sup>743</sup>  
<sup>744</sup>  
<sup>745</sup>  
<sup>746</sup>  
<sup>747</sup>  
<sup>748</sup>  
<sup>749</sup>  
<sup>750</sup>  
<sup>751</sup>  
<sup>752</sup>  
<sup>753</sup>  
<sup>754</sup>  
<sup>755</sup>  
<sup>756</sup>  
<sup>757</sup>  
<sup>758</sup>  
<sup>759</sup>  
<sup>760</sup>  
<sup>761</sup>  
<sup>762</sup>  
<sup>763</sup>  
<sup>764</sup>  
<sup>765</sup>  
<sup>766</sup>  
<sup>767</sup>  
<sup>768</sup>  
<sup>769</sup>  
<sup>770</sup>  
<sup>771</sup>  
<sup>772</sup>  
<sup>773</sup>  
<sup>774</sup>  
<sup>775</sup>  
<sup>776</sup>  
<sup>777</sup>  
<sup>778</sup>  
<sup>779</sup>  
<sup>780</sup>  
<sup>781</sup>  
<sup>782</sup>  
<sup>783</sup>  
<sup>784</sup>  
<sup>785</sup>  
<sup>786</sup>  
<sup>787</sup>  
<sup>788</sup>  
<sup>789</sup>  
<sup>790</sup>  
<sup>791</sup>  
<sup>792</sup>  
<sup>793</sup>  
<sup>794</sup>  
<sup>795</sup>  
<sup>796</sup>  
<sup>797</sup>  
<sup>798</sup>  
<sup>799</sup>  
<sup>800</sup>  
<sup>801</sup>  
<sup>802</sup>  
<sup>803</sup>  
<sup>804</sup>  
<sup>805</sup>  
<sup>806</sup>  
<sup>807</sup>  
<sup>808</sup>  
<sup>809</sup>  
<sup>810</sup>  
<sup>811</sup>  
<sup>812</sup>  
<sup>813</sup>  
<sup>814</sup>  
<sup>815</sup>  
<sup>816</sup>  
<sup>817</sup>  
<sup>818</sup>  
<sup>819</sup>  
<sup>820</sup>  
<sup>821</sup>  
<sup>822</sup>  
<sup>823</sup>  
<sup>824</sup>  
<sup>825</sup>  
<sup>826</sup>  
<sup>827</sup>  
<sup>828</sup>  
<sup>829</sup>  
<sup>830</sup>  
<sup>831</sup>  
<sup>832</sup>  
<sup>833</sup>  
<sup>834</sup>  
<sup>835</sup>  
<sup>836</sup>  
<sup>837</sup>  
<sup>838</sup>  
<sup>839</sup>  
<sup>840</sup>  
<sup>841</sup>  
<sup>842</sup>  
<sup>843</sup>  
<sup>844</sup>  
<sup>845</sup>  
<sup>846</sup>  
<sup>847</sup>  
<sup>848</sup>  
<sup>849</sup>  
<sup>850</sup>  
<sup>851</sup>  
<sup>852</sup>  
<sup>853</sup>  
<sup>854</sup>  
<sup>855</sup>  
<sup>856</sup>  
<sup>857</sup>  
<sup>858</sup>  
<sup>859</sup>  
<sup>860</sup>  
<sup>861</sup>  
<sup>862</sup>  
<sup>863</sup>  
<sup>864</sup>  
<sup>865</sup>  
<sup>866</sup>  
<sup>867</sup>  
<sup>868</sup>  
<sup>869</sup>  
<sup>870</sup>  
<sup>871</sup>  
<sup>872</sup>  
<sup>873</sup>  
<sup>874</sup>  
<sup>875</sup>  
<sup>876</sup>  
<sup>877</sup>  
<sup>878</sup>  
<sup>879</sup>  
<sup>880</sup>  
<sup>881</sup>  
<sup>882</sup>  
<sup>883</sup>  
<sup>884</sup>  
<sup>885</sup>  
<sup>886</sup>  
<sup>887</sup>  
<sup>888</sup>  
<sup>889</sup>  
<sup>890</sup>  
<sup>891</sup>  
<sup>892</sup>  
<sup>893</sup>  
<sup>894</sup>  
<sup>895</sup>  
<sup>896</sup>  
<sup>897</sup>  
<sup>898</sup>  
<sup>899</sup>  
<sup>900</sup>  
<sup>901</sup>  
<sup>902</sup>  
<sup>903</sup>  
<sup>904</sup>  
<sup>905</sup>  
<sup>906</sup>  
<sup>907</sup>  
<sup>908</sup>  
<sup>909</sup>  
<sup>910</sup>  
<sup>911</sup>  
<sup>912</sup>  
<sup>913</sup>  
<sup>914</sup>  
<sup>915</sup>  
<sup>916</sup>  
<sup>917</sup>  
<sup>918</sup>  
<sup>919</sup>  
<sup>920</sup>  
<sup>921</sup>  
<sup>922</sup>  
<sup>923</sup>  
<sup>924</sup>  
<sup>925</sup>  
<sup>926</sup>  
<sup>927</sup>  
<sup>928</sup>  
<sup>929</sup>  
<sup>930</sup>  
<sup>931</sup>  
<sup>932</sup>  
<sup>933</sup>  
<sup>934</sup>  
<sup>935</sup>  
<sup>936</sup>  
<sup>937</sup>  
<sup>938</sup>  
<sup>939</sup>  
<sup>940</sup>  
<sup>941</sup>  
<sup>942</sup>  
<sup>943</sup>  
<sup>944</sup>  
<sup>945</sup>  
<sup>946</sup>  
<sup>947</sup>  
<sup>948</sup>  
<sup>949</sup>  
<sup>950</sup>  
<sup>951</sup>  
<sup>952</sup>  
<sup>953</sup>  
<sup>954</sup>  
<sup>955</sup>  
<sup>956</sup>  
<sup>957</sup>  
<sup>958</sup>  
<sup>959</sup>  
<sup>960</sup>  
<sup>961</sup>  
<sup>962</sup>  
<sup>963</sup>  
<sup>964</sup>  
<sup>965</sup>  
<sup>966</sup>  
<sup>967</sup>  
<sup>968</sup>  
<sup>969</sup>  
<sup>970</sup>  
<sup>971</sup>  
<sup>972</sup>  
<sup>973</sup>  
<sup>974</sup>  
<sup>975</sup>  
<sup>976</sup>  
<sup>977</sup>  
<sup>978</sup>  
<sup>979</sup>  
<sup>980</sup>  
<sup>981</sup>  
<sup>982</sup>  
<sup>983</sup>  
<sup>984</sup>  
<sup>985</sup>  
<sup>986</sup>  
<sup>987</sup>  
<sup>988</sup>  
<sup>989</sup>  
<sup>990</sup>  
<sup>991</sup>  
<sup>992</sup>  
<sup>993</sup>  
<sup>994</sup>  
<sup>995</sup>  
<sup>996</sup>  
<sup>997</sup>  
<sup>998</sup>  
<sup>999</sup>  
<sup>1000</sup>  
<sup>1001</sup>  
<sup>1002</sup>  
<sup>1003</sup>  
<sup>1004</sup>  
<sup>1005</sup>  
<sup>1006</sup>  
<sup>1007</sup>  
<sup>1008</sup>  
<sup>1009</sup>  
<sup>1010</sup>  
<sup>1011</sup>  
<sup>1012</sup>  
<sup>1013</sup>  
<sup>1014</sup>  
<sup>1015</sup>  
<sup>1016</sup>  
<sup>1017</sup>  
<sup>1018</sup>  
<sup>1019</sup>  
<sup>1020</sup>  
<sup>1021</sup>  
<sup>1022</sup>  
<sup>1023</sup>  
<sup>1024</sup>  
<sup>1025</sup>  
<sup>1026</sup>  
<sup>1027</sup>  
<sup>1028</sup>  
<sup>1029</sup>  
<sup>1030</sup>  
<sup>1031</sup>  
<sup>1032</sup>  
<sup>1033</sup>  
<sup>1034</sup>  
<sup>1035</sup>  
<sup>1036</sup>  
<sup>1037</sup>  
<sup>1038</sup>  
<sup>1039</sup>  
<sup>1040</sup>  
<sup>1041</sup>  
<sup>1042</sup>  
<sup>1043</sup>  
<sup>1044</sup>  
<sup>1045</sup>  
<sup>1046</sup>  
<sup>1047</sup>  
<sup>1048</sup>  
<sup>1049</sup>  
<sup>1050</sup>  
<sup>1051</sup>  
<sup>1052</sup>  
<sup>1053</sup>  
<sup>1054</sup>  
<sup>1055</sup>  
<sup>1056</sup>  
<sup>1057</sup>  
<sup>1058</sup>  
<sup>1059</sup>  
<sup>1060</sup>  
<sup>1061</sup>  
<sup>1062</sup>  
<sup>1063</sup>  
<sup>1064</sup>  
<sup>1065</sup>  
<sup>1066</sup>  
<sup>1067</sup>  
<sup>1068</sup>  
<sup>1069</sup>  
<sup>1070</sup>  
<sup>1071</sup>  
<sup>1072</sup>  
<sup>1073</sup>  
<sup>1074</sup>  
<sup>1075</sup>  
<sup>1076</sup>  
<sup>1077</sup>  
<sup>1078</sup>  
<sup>1079</sup>  
<sup>1080</sup>  
<sup>1081</sup>  
<sup>1082</sup>  
<sup>1083</sup>  
<sup>1084</sup>  
<sup>1085</sup>  
<sup>1086</sup>  
<sup>1087</sup>  
<sup>1088</sup>  
<sup>1089</sup>  
<sup>1090</sup>  
<sup>1091</sup>  
<sup>1092</sup>  
<sup>1093</sup>  
<sup>1094</sup>  
<sup>1095</sup>  
<sup>1096</sup>  
<sup>1097</sup>  
<sup>1098</sup>  
<sup>1099</sup>  
<sup>1100</sup>  
<sup>1101</sup>  
<sup>1102</sup>  
<sup>1103</sup>  
<sup>1104</sup>  
<sup>1105</sup>  
<sup>1106</sup>  
<sup>1107</sup>  
<sup>1108</sup>  
<sup>1109</sup>  
<sup>1110</sup>  
<sup>1111</sup>  
<sup>1112</sup>  
<sup>1113</sup>  
<sup>1114</sup>  
<sup>1115</sup>  
<sup>1116</sup>  
<sup>1117</sup>  
<sup>1118</sup>  
<sup>1119</sup>  
<sup>1120</sup>  
<sup>1121</sup>  
<sup>1122</sup>  
<sup>1123</sup>  
<sup>1124</sup>  
<sup>1125</sup>  
<sup>1126</sup>  
<sup>1127</sup>  
<sup>1128</sup>  
<sup>1129</sup>  
<sup>1130</sup>  
<sup>1131</sup>  
<sup>1132</sup>  
<sup>1133</sup>  
<sup>1134</sup>  
<sup>1135</sup>  
<sup>1136</sup>  
<sup>1137</sup>  
<sup>1138</sup>  
<sup>1139</sup>  
<sup>1140</sup>  
<sup>1141</sup>  
<sup>1142</sup>  
<sup>1143</sup>  
<sup>1144</sup>  
<sup>1145</sup>  
<sup>1146</sup>  
<sup>1147</sup>  
<sup>1148</sup>  
<sup>1149</sup>  
<sup>1150</sup>  
<sup>1151</sup>  
<sup>1152</sup>  
<sup>1153</sup>  
<sup>1154</sup>  
<sup>1155</sup>  
<sup>1156</sup>  
<sup>1157</sup>  
<sup>1158</sup>  
<sup>1159</sup>  
<sup>1160</sup>  
<sup>1161</sup>  
<sup>1162</sup>  
<sup>1163</sup>  
<sup>1164</sup>  
<sup>1165</sup>  
<sup>1166</sup>  
<sup>1167</sup>  
<sup>1168</sup>  
<sup>1169</sup>  
<sup>1170</</sup>

so on. We use all these words, don't we? And we know sort of immediately what they mean. Unless we are pressed. If we are pressed, then we get confused. But if you allow us to -- we use "both"; we use "all" -- I gave you the example yesterday. We use them very significantly. But as I say, when pressed -- as I say -- if you expect two people, and the two people are there, will someone ask you in the other room "Are they all there?" No, you don't do that. You ask "Are they both there?" You make this distinction. And it's a very subtle one, as I say. We'll come back to it eventually.

Now, these levels of meaning, these new impositions, occur in the course of the development of human knowledge and <sup>the expression(?)</sup> extension of this knowledge, and as I say, spontaneously. They're not the object of a special investigation. It just happens that way. The various meanings, say, of the word "nature". Nature in Aristotle <sup>here</sup> has about 13 different meanings, but I will now record 7 of them -- of the word "nature", and an 8th one is given later by Boethius that is generally accepted, but in Aristotle there are still 13. But, let's stick to the 7 meanings of the word "nature". A simple word: <sup>thesis</sup> "thesis." [First, a drawn-out "....." -- the word "nature" meant --] and this is in current usage -- Aristotelian scholars do not know this by the way. To know this you have to go to a good etymologist or a good philologist, one who is expert in the Greek language and he will tell you. He will show you that this is the case. The first meaning of <sup>genesis</sup> "genesis" is the generation of animals as a process -- the birth. Primarily in animals, and by extension, attributed also to <sup>plants</sup> plants. A coming forth. The actual process of being born, as say, the acorn growing out of the oak tree, then falling to the ground, and then comes forth -- some vague

chance -- another oak tree. It's this process that is signified by "Phusis." "Phusis." signifies not something fixed, not a principle, but the very "Phusis." That's the first meaning.

Then the word was imposed to mean that from which this process is coming forth; of the living being, the principle of that process, and principle is now called nature. Something intrinsic to the thing. And from which this thing that comes forth by way of process, comes forth. Second meaning.

The third meaning, means now the intrinsic principle of whatever change occurs in nature, a principle that is intrinsic to the thing itself. As this chalk falling. Look, I'm not pushing it down. It's falling all by itself. We attribute this change to something intrinsic to this, whatever it is. It's not extrinsic. This is extrinsic -- when I break the chalk. Intrinsic principle would be, say, to show the difference now between intrinsic principle and another kind of principle, would be this: My eyes grow from within. I attribute my eyes to nature. I didn't make my eyes. They came forth from within. But, my spectacles. They have an extrinsic principle. We made them ourselves, deliberately. They grew, not from nature, but from our own heads, and deliberately so. There's a difference between the artificial things and the natural things. The natural comes from within. What is that? I don't know. All I know is that I distinguish between things that have -- they are what they are by something intrinsic in them from which, whatever they do, or what their behavior is, <sup>it</sup> comes forth. That's all. As opposed to an extrinsic one. It's by comparison that we bring this out.

And then there's a fourth meaning of the word "nature", and

it means now that the material, the natural material -- the material -- the type of material that is a principle of motion. This is identified now -- finally it is identified with what Aristotle calls ~~prime matter~~ *prime matter*. This is not a popular position, but this is an exception -- I say, prime matter -- that's way over here. But there is such a principle first pointed out by ~~First~~ Antiphon, the Greek philosopher who said, that if you plant a wooden bed in the soil, and the wooden bed happens to shoot forth -- no -- happens to produce a shoot, what comes from the wooden bed would not be another bed, but more wood. So that the stuff that a thing is made of is a principle of change. Aristotle uses this argument of Antiphon, but of course in his own way. But he does use Antiphon's example as an exemplum.

And finally we have the meaning of nature that is a form. That is, that by reason of which a thing is of a certain kind, and which, when propagating itself, which is most manifest in living things, will produce something of the same kind, as an oak tree producing an oak tree; as horse producing horse. Now, that by reason which a horse is a horse is certainly a principle of what goes on in him, and of what the horse does, so form which is a later imposition -- form now is also called nature, and it is nature principally. ~~It is nature principally.~~

Now, notice. We have a reverse order here. The first meaning of nature -- consider all these meanings. You have them -- by the way -- if you want to see these meanings, just look up the beginning of Aristotle's *Metaphysics* 5 and St. Thomas Lesson 5. His commentary on the *Metaphysics*, Book 5, Lesson 5, where he enucleates all these meanings.



Now, notice. This was the first meaning of nature. The process. The raw materials of industry. That's over. If you compare this process to this last meaning of nature here, here, now, the Greeks already use the word nature in this sense. Well this is far more nature than that is because this is the first adjunct to that -- material. And then we get form -- a very root of all the rest, because matter would not be nature without form, and an adjunct meaning -- adjunct to the first without form, and this here would not be nature without matter and form -- that is, the third meaning of nature is intrinsic principle of motion and rest that is within the thing per se. and not per accidens. I'm not going to explain all that now. What I want to insist on now is just the multiplicity of meanings. And this here is just intrinsic principle of the thing that is born, without any further specification. And this here is the actual process. That is, this is what -- this is -- one comes from two; two comes from three; three comes from four; and five; and five is the most determinate meaning of nature. So you have a reverse order here. St. Thomas says "in the order of denomination which reflects the order of our knowing, where we know this first and that thereafter, and where what is most knowable itself is least known to us, and what is least knowable itself is most known to us, because of the inverse/between our denomination and the order of things themselves." So that, if we can say the order of things themselves, this has most of all the character of nature. If we consider the order of our knowing, this is nature first of all. This is a primary analogate in the order of that denomination, this is the primary analogate in the order of things themselves.

Now there is another meaning -- two adjunct meanings. Adjunct to these here. And this would be -- in English we'd call this matter, nature in the sense of raw material, such as iron ore, and that would be called prime matter. Not in the sense of the 1st book of the Physics, but in a current sense. In French we still

say ~~the nature of matter~~ <sup>the matter of</sup> The raw materials of industry. That's over here. Now, the Greeks already use the word matter in this sense. It's adjunct to that -- material. And then you have form -- a new meaning of form, and an adjunct meaning -- adjunct to the fifth meaning over here, which means what a thing is. Which is a very different meaning of the word "nature". Different from all these. For instance, we speak of the nature of a circle. Now that would be what a circle is. Or the nature of the English language. We'll speak of the nature of place, the nature of time. But of course, time is not a nature in any of these senses, nor is a circle a nature in any of them. All these senses, from the second down to the fifth, although the first one also implies principle. It's something coming forth from something, but it is the coming forth that you see, and not exactly that from which that which comes forth, comes forth.

This is the nature in the sense of circles, and meaning therefore that which is expressed by definition. Let me give you an example of this use of nature. In the definition of "person" given by Boethius in the De duobus Naturis, -- the definition given by Boethius is this: Rationalis natura individua substantia -- the individual substance of a rational nature. Now how is the word "nature" used here? What does it mean? Does it mean nature in any of these senses here? No. Over here. And you might, absolutely speaking, have said essentia..... So why does Boethius use "natura" instead of "essentia"? St. Thomas says that a person is a special kind of essence, a very special one. Now, essence is a very common term, for whatever is has some nature, either remotely -- that is, at least remotely. For instance, the nature of this table -- if I take the nature of this table -- it would be, well, what it is

made of, the shape that it has, its form. But then there would be the nature of this table -- what is it? Plastic? Or Wood? If it's wood, then it's wood that is its nature. If it's plastic, that's also nature too, but only remotely. Nature would refer to what the plastic is ultimately made of. Yes. St. Thomas says that Boethius ~~showed the~~ chose the word "nature" here because nature has a narrower meaning and is more appropriate to show a particular kind of essence, namely the one that is rational. But notice how all this -- why should St. Thomas and Aristotle bother about going back? Because they do not want to lose their moorings that are the things that we know first, and most commonly know. That's important. The most important thing.

Thus we start halfway. Take any textbook you wish to show me. You know where the word "nature" will start? Over here someplace. Right here. These are the meanings that would be explained.

That's not enough. That's too abstract. Take the definition I just gave you. It has to be established by a lengthy argumentation which is not demonstrative. It's an exemplum. And notice

that St. Thomas, when he explains the meaning of the nature <sup>word</sup> ~~is~~ *the way we say*, the third meaning of <sup>*it corresponds to*</sup> the word nature in the Physics <sup>*1*</sup> he insists <sup>*that*</sup> *V, 5, -* he derives the definition from the way we talk about nature.

..... we say, we call things nature by nature in our midst. The way we talk about it. That's extremely important. And why can't it be important, because after all, what we say reflects our conceptions. Expressing what we know of a thing. Not the thing itself, except as we know it.

The textbook will do this you see. This is the most important meaning of the word nature, and if you're not going to lead me back, whatever the word may be, to something as primitive as this, I won't

*omit*  
even listen to you. [I refuse to, which is the history of my initiation to philosophy. I refuse to listen.]

Well, the rest -- now this is the second half of that page. I'll just read it to you. Now one of the special interests of the philosopher is to grasp a meaning which is basic as to us -- basic as to us -- meaning our nature -- meaning the process in which a living being comes. The process of being born. Think of the fruit growing out of the tree. Think of a dog giving birth to pups. They come forth from within, that's the idea. That's nature. It's a coming forth. Not that from which they come forth. That's the second meaning of nature. They're all vague, and we must respect the vagueness. If we have contempt for vagueness, for our vague knowledge, as if whatever is only vaguely known is irrelevant, we might as well do away with all knowledge and go to sleep for the rest of your days. So ~~as~~ <sup>the point</sup> is to grasp a meaning which is basic as to us and upon which later meanings depend to be understood. If his own vocabulary becomes divorced from those basic and readily verifiable means, it follows that he cannot know what he is talking about no matter how much he talks. Actually he will not be talking; he will just be making noise, which is what philosophy mostly is, as I told you yesterday. The deadend -- I say this out of respect for philosophy. Because philosophy by its very nature is the paradise of fools, as you know. Or rather -- the ..... and they get in there by abusive words. Cross passwords. The deadend of scholasticism referred to yesterday was run into when the later meanings of words used in philosophy were divorced from meanings known by the men in the street. It is this kind of divorce that comes to full circle in no classes, classes with only one member, parts that are severally greater than

their whole, relations without terms, ..... without terms, not to mention words that do not signify. And these are in current use among certain people today. I know what a null class is, but I wouldn't call it a null class if I had anything to do with the naming. I'd call it something else. Not a null class. When I say class, right away to me that means multiplicity. If I had one thing, I'm not going to call it a class. Because there are reasons for invoking the idea of class here, but these two things should be kept apart. It's confusing. It makes for a kind of secret society, and in philosophy there should be no secret society. Although there was one in the beginning, with Pythagorus, for a mysterious reason. It was secret mainly because of irrational numbers.

Let's see - tomorrow I'll give you the definite example of how philosophy ..... and how it becomes a difficult subject. It is a difficult subject, but how it becomes and needlessly, a difficult subject to beginners. The beginner -- he gets no beginning. He gets a middle. And he has to start from the middle. From words that do not signify, but words that can be played around with, as we can play around with sounds and shapes.

I hope I haven't been too nasty. I'm sure you must be somewhat disappointed because I'm afraid you understand absolutely everything that I said, which is unphilosophical.

Shall we stop for a while.

-----