# Agriculture

LECTURE I,

( Rudolf Steiner, in his opening address to the audience of this lecture course which took place on the large farming estate Schloss Koberwitz in Silesia ( Germany), sends his thanks to all who have co-operated in creating the occasion of these agricultural lectures and talks He especially thanks Count and Countess Kyserlingk for their hospitality, He then continues: )

I am quite convinced that everyone here will be perfectly satisfied with the hospitality that has been provided. Whether you will be equally satisfied with the course of lectures itself is a question which is perhaps open to dispute, although we shall do our best during the discussions which will take place later, to reach accord on what has been said, For you must remember that though in many quarters there has been an ardent desire for such a course of lectures, it is the first time that I have undertaken such a task from within the heart of Anthroposphical strivings.

A course of this kind naturally makes many demands for it will show us to what extent the interests of Agriculture are bound up with those of the widest circles of human existence and that there is scarcely a single sphere of life which has not some relation to Agriculture. From some viewpoint or another all the various interests of life are contained in Agriculture, Here we shall naturally only touch upon the central portion of the subject itself. But this necessity will lead us to detours which are inevitable, because everything which is said will have Anthroposophy itself as a basis. I would in particular ask you to forgive me if in the introductory lecture to-day there is much that seems so divergent from our subject that many of you will not immediately see what bearing it has upon specifically agricultural problems. But what we shall say to-day of things which may seem remote will nevertheless be the basis of our work.

The cultural life of modern times has had particular and serious effects upon Agriculture. It has had economic consequences, the destructive character of which few people todawy have the slightest idea. And it was in order to defeat these tendencies that certain economic enterprises were attempted within the Anthroposophical Movement. This work was undertaken by industrialists and business men, but they did not achieve all the aims they had set themselves, simply because at the present time there are too many opposing forces to allow of this attempt being really understood. The individual is helpless in the midst of these existing hostile powers, and the inner kernel and essential aims of these economic strivings which originated in the Anthroposophical Movement have therefore never really come under discussion.

What were the practical questions at issue? I will explain them taking Agriculture as an example in order to deal with the matter in concrete rather than in abstract and general terms. There are to-day a great many books and lectures on so-called Economics, These contain chapters on Agriculture ; the authors try to deal with this subject on the basis of economics. Now in connection with agriculture this whole business, books and lectures an economics is manifest nonsense. This nonsense is however, very wide spread to-day. Everyone should be able to see that Agriculture and its place in the social order can only be discussed when one starts from a knowledge of what is entailed in the growing of turnips potatoes and corn. Without this it is useless to discuss principles of Economics involved. These things must be unravelled on the basis of the actual facts they cannot be established on vague theoretical assumptions, If you say this to those who have listened to a number of their university colleagues talking about Economics in relation to Agriculture it will strike them as completely absurd

because they regard the subject as already established. But this is not the case. Judgment in agricultural matters must come from practical knowledge of field and forest and of the breeding of animals. There can be no fruitful vision in agriculture or in anything else so long as people do not realise that this hovering over the subject from the point of view of Economics is mere talk and nothing more; one must go back to the practical foundations in every department of life. You can say of a turnip that it has such and such a colour and consists of such and such constituents, But that is not to understand the turnip - not by a long way, nor, above all does it take into account the living relationship of the turnip to the soil, to the season at which it ripens, and many other important matters ,

Let me make this clear by an illustration taken from another sphere. If you observe the needle of a compass you discover that one end always approximately points to the north, the other to the South. But you seek the cause for this not in the magnetic needle itself but in the earth as a whole, at one end of which is what is called the Magnetic North at the other end is the Magnetic South Pole. To try and discover from the magnetic needle itself why it should so obstinately turn in one direction would be absurd. For its constant maintenance of direction can only be understood in relation to the whole earth. Yet what in the case of the magnetic needle is clearly absurd is regarded by many people as sense when it comes to other things. The turnip is regarded as growing only within the narrow confines of its immediate earthly surroundings, but this becomes impossible if one comes to the point that its growth may be dependent upon innumerable factors which are not present on earth at all but in its cosmic surroundings.

And thus in practical life many things are explained and ordered to-day as though we had to do only with the narrow isolated phenomenon, and not with activities and influences coming from the whole Universe, The various departments of modern life have suffered very gravely through this and would have suffered still more had not people continued to rely on a certain instinct in these matters in spite of all advances of modern science. To turn to a completely different sphere it has always been a source of satisfaction to me that people who, following their doctor's orders, weigh every morsel of the food they eat - so many ounces a meat, so many ounces of cabbage ( some people even have scales on the table beside their plates ) - it is always a source of satisfaction to me, when the unfortunate individual still feels hungry, so long as he has not had enough, and thus proves that instinct is still present in him. In the same way, instinct was at the root of all the work of man in this realm before there was a science of the subject, and its indications were often very sure ones. The old calenders with their versified rules of practice that one still finds among peasants are often surprisingly wise and expressive. And it is quite possible for a man with sure instincts to avoid superstition in these matters. For along with very profound sayings concerning the sowing and reaping of grain we get occasional sayings directed against extravagances for example "If the cock crows on the dunghill it will either rain or keep fine" (Kraht der Hakn auf dem Mist, so regnet es oder bleibt wie ea ist) Instinctive wisdom is always sufficiently armed with a sense of humour to be on its guard against superstition. Speaking from the Anthroposophical point of view what we have to do is not so much to return to the old instincts as, through a deeper spiritual insight, to discover things which can be applied ever less and less by the instincts as they have become uncertain.

This task demands that in studying the life of plants, of animals and of the earth itself we should extend our views to the whole cosmos. For while it is quite right to reject a trivial connection between rain and the phases of the Moon, yet on the other hand the following has happened, I have told the story already on other occasions. In Leipsic there were two professors one of them Gustav Theodor Fechner, a man gifted with keen insight in spiritual matters, claimed that from

external observations which he had made, the existence of a connection between periods of rain and the course of the Moon around the earth was not a mere superstitious belief. He had come to this view through statistical evidence. But his colleague, the famous Professor Schleiden denied the contention on theoretical grounds. These two university professors were both married and Fechner who had a certain sense of humour, said: "Let our wives decide which of us is right" Now it so happened that in those days at Leipsic, water was scarce and had to be fetched from a distance. So it was the custom in order to have sufficient for washing day, to collect rain which ran from the houses in pitchers and barrels. Frau Professor Schleiden did this, and so did her neighbour Frau Professor Fechner. But there was not room for them both to set out their pitchers and barrels in the courtyard at the same time. So Professor Fechner said: "If my honoured colleague is right and the time of the month does not matter, then Frau Professor Schleiden can put out her pitchers at the time when according to my reading of the Iunar phase there will be less rain, and my wife will put out hers during the period when my calculations tell me there will be more rain. If my theory is all nonsense, Frau Professor Schleiden will no doubt gladly fall in with this arrangement," But lo and behold! Frau Professor Schleiden would do nothing of the sort and preferred to go by Professor Fechner's statement rather than by that of her husband.

And so it often happens Science may be right, but practice cannot be ruled by " the rightness" of science. But to speak more seriously. This example has only been 'introduced in order to show that we must look a little further than we are accustomed to look nowadays when we are considering that which alone makes it possible for man to live on this planet - I mean Agriculture. I cannot say whether what I going to say out of Anthrosophy will be satisfactory to us In every respect, but I shall try to bring before you what Anthroposophy can contribute to Agriculture.

I will now begin to draw your attention to some facts within our earthly existence which have an important bearing upon Agriculture. We are so accustomed nowadays to lay the chief stress upon the physio-chemical constituents of any substance. Now I propose to start from an examination not of the physio-chemical constituents, but of something which lies behind them and is of very special importance to the life of the plant on the one hand and of the animal on the other. Human life and to a certain extent the life of animals as well has become emancipated to a large extent from world workings outside them. The nearer we come to man, the more strongly marked is this emancipation. In both 'human and animal life we find manifestations which seem to be entirely independent of extra-terrestrial influences or even of the atmospheric influences surrounding the earth. Not only does this seem so, but it actually is the case in regard to many things in life. True, we know that certain atmospheric changes will accentuate the pain attending certain illnesses. What is less well known is that certain illnesses and certain other life phenomena imitate in their rhythms the course of certain processes in nature, but do not coincide with those of these natural processes in their beginnings and endings. We need only recall one of the most important phenomena, female menstruation, which in its rhythmic character is an imitation of the monthly changes of the Moon, yet the beginnings and endings of the two phenomena do not coincide. There are many more intimate manifestations - both in the male and the female organisms, which imitate the rhythms of Nature. For example, a closer study of the periodicity of sun-spots would bring us to a better understanding of much that happens in the social life. But these things are not noticed, because the social phenomena which corresponds to the periodic change of the spots on the sun, does not begin and end when they do, but has become emancipated from them. The periodicity and rhythm are the same but there is no coincidence in time. It is easy enough to

dismiss as nonsense the statement that human life is a microcosm which imitates the macrocosm. If for instance one refers to certain illnesses having a period of fever which lasts seven days it could be objected that whenever the fever corresponding external phenomena occurred in nature, the fever ought to appear and run a parallel course; but the fever does not do this! Nevertheless it is true that the fever retains the inner rhythm even if its beginning and end do not coincide with those of the external event. This emancipation from cosmic events is almost complete in the case of man; it is less complete in the animal; while plant life is to a high degree immersed in the general Cosmic life of Nature and also in its earthly surrounding. For this reason we shall never acquire any real understanding of plant-life unless we realise that everything on earth is only a reflection of what takes place in the cosmos. This reflection is hidden in the case of man because he has emancipated himself. He carries within him the inner rhythm. But the connection is still there in the highest degree in plants and it is to this that I wish to direct your attention in this introductory talk.

In the immediate vicinity of the earth, we have the Moon and the other planets, be old instinctive science which reckoned the Sun, as one of the planets had one of the following sequence Moon Mercury, Venus, Sun, Mars, Jupiter, Saturn. Now without going any further into the astronomical aspect of the subject I wish to point to the relation which exists between planetary life and life on the earth. If we consider life on the earth in general the first thing we have to take into account is the very important part played by the what I might call the life of the silicious substance in the world. You will find this silicious substance in the very beautiful mineral quartz enclosed in prismatic and pyramidal forms. Quartz is silicious substance combined with oxygen; remove the oxygen mentally, and you have the so called silicon. This silicon is regarded by modern chemistry as one of the elements (oxygen, etc,) and when united with oxygen may be regarded as a chemical substance. But we must not forget that this silicon which lives in the mineral quartz makes up from 47% to 48% of the crust of the Earth. Ie a higher percentage than that of any other substance on earth, oxygen, for example, amounting only to 27% to 28%. Now silicon, in the form in which it appears in such stony substances as quartz, does not at first seem to possess very much importance if we consider only the material of the soil of earth with its plant growth. Quartz is not soluble in water - the water trickles through it. It thus seems to have no connection with the ordinary commonplace view of "conditions of life". But if you take the Equisetum (horsetail) you will find that it consists of 90% of silicon (the same substance of which quartz consists) in very fine distribution through its form. This shows the enormous importance which this substance, silicon must have. It forms nearly one half of everything on the earth, And yet so completely has its importance been overlooked that its use has been neglected even where it can have the most beneficent results. Silicon forms an essential constituent of many remedies used in Anthroposophical therapy. A whole series of diseases are treated either internally or by baths with this substance, the reason being that what appears in the form of abnormal conditions of the sense organs ( it on1y appears there, it does not real1y lie there ) the internal sense organs, as a cause of pain is strangely accessible to the influence of silicon. And in general silicon plays the greatest conceivable part in what has been called by the old-fashioned name of the "household of Nature". For It is present not only in quartz and other stones, but in a highly refined state in the atmosphere. Indeed it is present everywhere. One half of the earth at our disposal consists of silicon, What then is the function of this substance?

To answer this question let us assume that our earth contained only half of the quantity of silicon which it actually does possess. We should then have plants in more or less pyramidal form: the blooms would be atrophied and indeed all plants would assume generally the shape of the cacti which strikes us as so abnormal.

The cereals would look grotesque; their stems would grow thick and fleshy towards the base, but the ears would be emaciated and without grain,

So much for silicon. On the other hand in every part of the earth although not in such abundance as is silicon, we find lime and their allied substances ( limestone Potash and Sodium). If these were present in small proportions we should have plants whose stems were only narrow and twisted we should have only creepers. There would be blooms of course but the would be useless and yield nothing of any food value. It is only through the balance of these two formative forces - as embodied in these two substances, silicon and limestone - that plant life can flourish in the form in which we know it today.

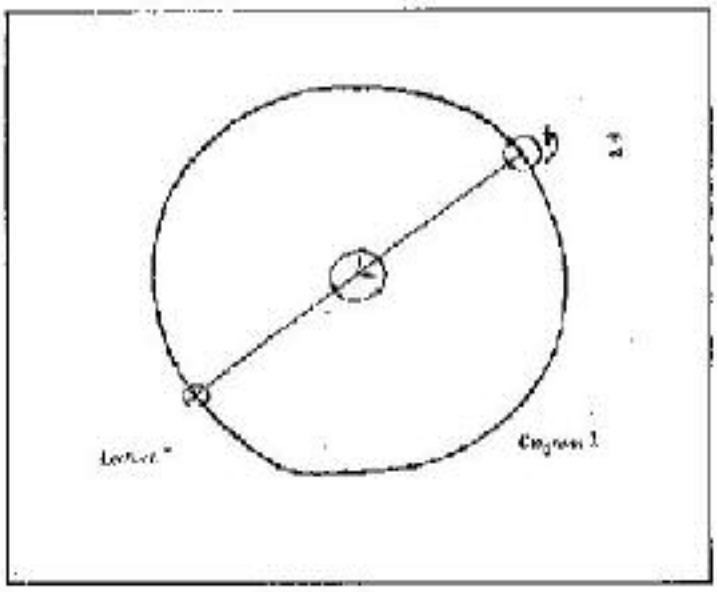
Now everything silicious contains forces that come not from the earth but from the so-called distant planets- Mars Jupiter and Saturn - the planets beyond the Sun. These planets work indirectly upon plant-life through silicon and allied substances. But the planets near the Earth- Moon Mercury and Venus, send out forces into the plant life and animal life on earth through the medium of the limestone and kindred substances. Thus of any cultivated field it may be said that the forces of both silicon and limestone are at work in it. The silicon mediates the influences of Mars, Jupiter and Saturn, the limestone those of Moon, Venus and Mercury.

Now let us turn to the plants themselves. There are two things to notice about all plants. The first is that the plant world as a whole and every single species have the power to perpetuate their kind and develop the force of reproduction, etc. The second is that the plant as a member of a relatively low order of nature serves as nourishment for members of higher orders. These two fundamental tendencies seem at first to have little to do with one another. For if we only look at the passing on of the step from parent plant to offspring and so on, it is a matter of difference to the formative forces of Nature whether or not the plant is used for food. The two interests ( ie of mature and Man) are completely different , and yet the forces of Nature act in such a way that the inherent powers of reproduction and growth and of producing generation after generation of plants are active in the cosmic influences exercised upon earth by the Moon, Venus and Mercury through the mediation of limestone. If we consider plants which are not used for food, which do nothing but reproduce themselves, we take no interest in the cosmic forces of Venus, Mercury and Moon, related to reproduction. But in the case of plants which are eminently suitable for food because their substances have become perfected to the point of forming foodstuffs, for human and animal consumption, it is the planets Mars, Jupiter and Saturn that are working through the medium of silicon. Silicon opens up the being of plant to the expanses of the Universe, it awakens the plant's senses, so that it absorbs the formative forces bestowed by the distant planets, Mars, Jupiter and Saturn. From sphere of Moon, Venus and Mercury on the other hand, the plant absorbs only that which makes it capable of reproducing itself. Now this seems at first to be just an interesting theory. But every insight taken from a wider horizon leads us quite naturally from theory to practice.

If then certain forces coming from the Moon, Venus and Mercury enter the Earth and become effective in plant life the question arises: What will promote and what will restrain the activity of these forces? For Instance in what way can the activities of Moon or Saturn be modified in their influence on plants? If we observe the course of the year, we shall find that on some days there is rain and on others none. All that the modern physicist observes is the fact that on rainy days more water falls on the Earth than on dry days! Water moreover is to him something abstract consisting of oxygen, hydrogen, and nothing more. If water is

decomposed by electrolysis it is split into two substances, each of which acts in its own way. But this tells us nothing about water , There is much more hidden in water than appears in the chemical properties of hydrogen and oxygen. Water by its very nature is eminently fitted to bear along with it the forces coming from the Moon on to the Earth, So It comes about that it is water which distributes the lunar forces throughout the earthly realm. There is a certain kind of relation between the Moon and the water on the Earth. Let us suppose that after a rainy spell there is a full moon, Now the forces coming from the Moon when it is full causes something tremendous to happen on Earth. They shoot right into the whole growing forces of the vegetable kingdom. They cannot do so if there has not been a rainy spell beforehand. We must always realise the importance of sowing seed after rainy days followed by the full moon and we should never work at random (true something will always come up). The question: How to connect our seed-sowing with rain and full Moon has definite practical importance, because the forces that come from the Full Moon work powerfully and abundantly on certain plants after rain but only weakly and sparingly after a spell of sunny weather. The old adages of husbandry contained such knowledge. People recalled the adage, and which told them what to do. These adages or saws are looked upon nowadays as superstition and scientists are not yet sufficiently interested to work out a real science of the matter.

Furthermore around the Earth we find the atmosphere ,In addition to consisting of air the atmosphere has the property of being sometimes warm and sometimes cold. At times there is certainly accumulation of heat which, if the tension becomes too great, may discharge itself in a thunderstorm. Now what can we say about warmth? Spiritual observation shows that while water has no relation to silicon, warmth is so powerfully related to it that it enhances the activity of the forces working through silicon namely , the forces coming from Saturn Jupiter and Mars. These forces coming from Saturn Jupiter and Mars have to be valued on quite a different scale from that adopted in the case of Moon Venus and Mercury, for it must be remembered that Saturn takes thirty years to go round the Sun, while the Moon takes only about twenty-eight days to pass through all its phases. Thus Saturn only visible for fifteen years, consequently stands in quite another relation to the growth of plants compared with the Moon. As a matter of fact Saturn is not only active when it is shining down on the Earth, it is also active when its rays have to pass from below, as it were, through the Earth.



Now as Saturn takes thirty years to revolve around the Sun we find that at certain times It shines directly on one spot on the Earth and that it can work upon this spot by going right through the Earth , (See diagram No 1) The strength with which the Saturn forces influence plant life on Earth always depends upon the warmth-condition of the air. If the air is cold they cannot reach the plants, if the air is warm they can. How then can we see their influence at work in the plant? We see it not in the annuals but in the perennials; not in those plants which grow up and die in the course of one year leaving only their seed behind them but in those which are perennial. It is the latter whose growth Saturn promotes with the help of the warmth forces of the Earth. The effect of these forces working through the mediation of warmth, is to be seen, for instance in the bark or cortex of trees and in everything that makes the plant a perennial. When the lives of plants are limited to the short span of a single year, it is because of the relation in which those plants stand to the planets with short periods of revolution. On the other hand, that which emancipates itself from the fleeting process and is made permanent in the formation of bark around the growing trees is connected with the planetary forces working through the mediation of warmth and cold, and the periods of revolution in these cases are long. Thirty years in the case of Saturn, twelve in the case of Jupiter. Again it is well for anyone who wants to plant an oak tree to know something of the periodicity of Mars, for an oak tree planted during the appropriate period of Mars will thrive much better than one planted unthinkingly, at any moment that happens to be convenient, Or, if you have a plantation of conifera, where the Saturn forces play so great apart, it will make all the difference if the trees are planted when Saturn is in the so-called ascending period or at another time. Anyone who has insight into these matters can tell quite accurately in the case of plants that are doing well or badly whether or not they have been tended with a right understanding of their relation to planetary forces., For what is not always obvious to the external eye is revealed to more intimate observation.

To take for example; If we burn wood taken from a tree which has been planted without an understanding of the cosmic rhythms we do not get such a healthy heat as from wood taken from a tree which has been planted with right understanding. It is precisely on the little matters of everyday life that these things play so great a part and that the importance of such differences are

revealed. But people live their lives almost unthinkingly. They do not take the trouble to consider such details and everything goes on like a machine. If you pull the right trigger, the machine works, and the materialistically- minded imagine that the whole of Nature works on the same principle. And yet regarding nature so and working upon upon her in this way brings us face to face with certain stupendous results in practice. Why, for instance is it impossible to-day to obtain such fine potatoes as I remember eating in my youth? It is impossible to find such potatoes even in the districts in which they used to be grown. (It is really so I have tested them everywhere) The nutritive forces of certain foods have actually declined over a passage of time. The last decade shows this quite distinctly. The reason is we no longer understand the intimate forces at work in the whole cosmos. These must be sought for once again, and sought for along such lines as I have indicated to-day by way of introduction. I have merely touched upon certain questions which extend far beyond the horizon of contemporary vision. We shall not only continue this consideration, but shall search more deeply for a means of applying it to practical life.