22 January 1962

Section 1

Last week you were told that a special notation was required to describe precisely the processes of transformation of energy; and tonight we begin to learn this notation which is part of a universal language – the language of the Inner Circle of Humanity. First you have to forget for the moment all you have heard about Cosmoses and look at the universe from another angle. Just as the physicist has to use quantum theory on Mondays, Wednesdays and Fridays, but wave theory on the other three days of the week – as Schrödinger has expressed it – so tonight you are going to hear the System equivalent of 'wave theory'. This, like everything else, is based on the interplay of the two fundamental cosmic laws, the Law of Octaves and the Law of Three Forces.

We begin by describing the process of creation along our particular 'Ray of Creation' from the Absolute or All to Earth's satellite the Moon, as one great cosmic octave:

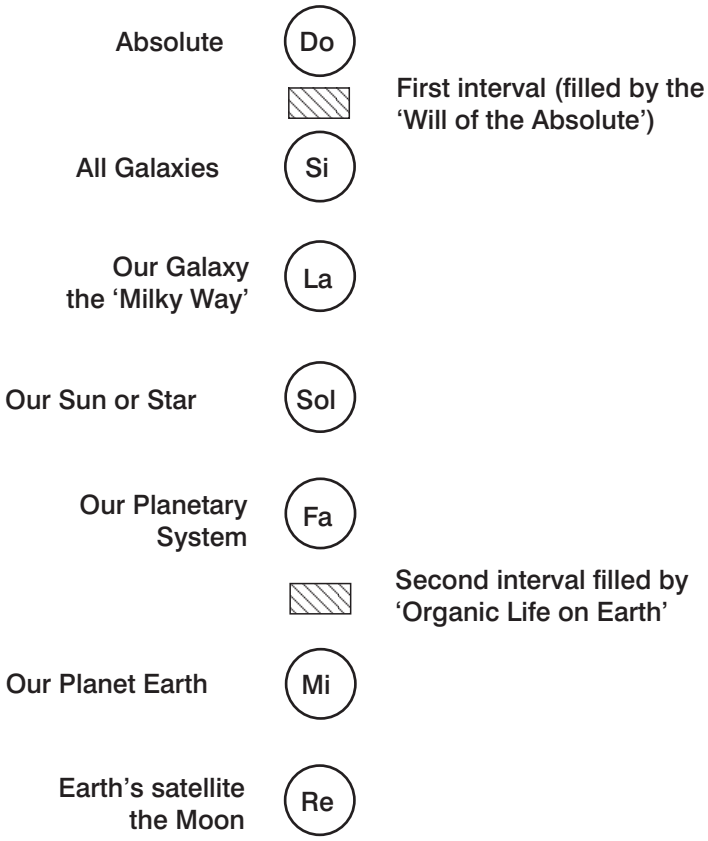

Figure 1

Please note especially:

1. This is based on the true *Principle of Relativity*. We live on the *Earth*, and we have to know far more about the Earth than other planets and their satellites; we neglect other solar systems, and other galaxies. Everything is taken as relative to the observer.

2. The special feature of the Law of Octaves is that vibrations do not pass uniformly along an octave; there are two points at which an additional impulse is required. In a descending octave like this one, these two points are between Do and Si and between Fa and Mi.

3. The additional impulses are respectively stated to be the 'Will of the Absolute' and the film of Organic Life on Earth, the Biosphere.

(Pause for discussion so that the notation is understood)

You have already heard that between every two notes of a main or primary octave, there exists a whole secondary octave, and between every two notes of the secondary octave there

exists a whole tertiary octave. This leads to a conception of the universe too complex for our minds to grasp. The System simplifies the conception by applying the Law of Three Forces to the primary octave and describes three Octaves of Radiations: 1) from Absolute to Sun, 2) from Sun to Earth and 3) from Earth to Moon.

Moreover, this abridged picture is again in accordance with the Principles of Relativity and Scale. For the Moon, though small, is so near the Earth that its vibrations (as seen in the tides, for instance) have as great an effect as all the other planets together, and the Sun, the hub of our Solar System, has as great an importance for us as all other stars and galaxies together.

Discussion: Please learn and try to understand the construction. Note that the 1st interval of each octave is taken as filled Do. For the lower intervals in each octave we have to discover what the necessary additional impulses are. A hint is given in the middle octave where this is said to be 'Physical life as we know it'.

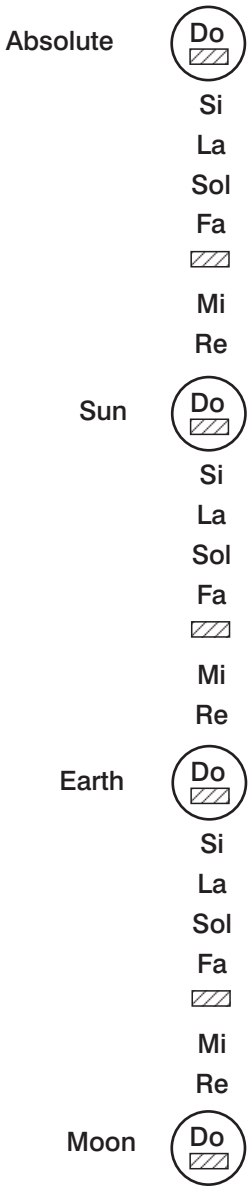

Figure 2

Section 2

This division of vibrations into Octaves is becoming part of the language of Science today. You are familiar with the division of electro-magnetic vibrations from Cosmic Rays to slow-alternating currents into 60 octaves. And now we have an article by a Scientific Correspondent of *The Times* from which the following quotation is taken:

Temperature Ranges in Octaves (Friday, 5th January)

A striking advance in recent years has been in the range of temperatures that can be produced in the laboratory. This has taken place in both directions – downwards towards the (unattainable) absolute zero of temperature; upwards towards the goal of 100 million degrees C., the temperature necessary if the energy released in thermo-nuclear reactions is to be used to generate electricity. Of the two, progress towards the attainment of lower temperatures has been the more remarkable.

This may seem surprising when it is remembered that the absolute zero of temperature is in the neighbourhood of –273°C. It might be thought that the range in temperature from the absolute zero to temperatures that we live and work in was much less than that from room temperature upwards – to, say, 20 million degrees. This, however, is not a good way to compare temperature differences; the difference between having no money in hand and £100 is clearly more significant in practical terms than the addition of one more £100 to a millionaire's fortune. Here the significance of an addition or subtraction is in rough proportion to how much the man has to begin with, and the same rule applies to temperature.

...

A more suitable yardstick is suggested by the musical octave, a difference of an octave, up or down, corresponding with a doubling or halving of frequency. In these terms the lowest attained temperature recorded in a 1939 reference book was less than nine octaves below freezing point. At the same period, the highest temperature reached in the laboratory was less than four octaves above freezing point – an overall range of little more than a dozen octaves.

Now, the lowest temperature is some 28 octaves below freezing point, and the highest reached in a laboratory about 16 octaves above it – a range of 44 octaves in all, or nearly four times as great as before. If thermonuclear explosions are included – and for those who plan them, each is an experiment – another four or five octaves would be added.

...

Whatever the future of thermonuclear research and the kind of physics to which it leads, research at very low temperatures has so far been scientifically more rewarding. This was so even before the present stage of very low temperatures had been reached – the record is about one-millionth of a degree absolute – and it looked for a time as if most of the cream had been taken from the subject. Liquid helium, when studied at the nowadays comparatively high temperature of 2.186 deg. absolute, was found to show surprising effects – a very high and unusual kind of conductivity for heat, a unique kind of film-flow (any material in contact with the liquid helium being quickly covered by a film about a millionth of a centimetre thick), a thermal wave motion known as 'second sound', and a spectacular fountain effect suggestive of a world not otherwise encountered by science.

The new world – which it really was – is one in which the laws of quantum mechanics, normally manifest only in relation to the behaviour of electrons or nuclear particles, are seen to determine the behaviour of matter in the mass...

This is particularly interesting to us, as long ago we were especially advised to look at the three Octaves of Radiations in terms of temperature – the coldest matter (minimum density of vibrations, maximum density of matter, maximum 'entropy') being on the dark surface of the Moon.

Section 3

In order to reach a precise description of all levels of matter met within our branch of the universe, we now apply the second law, the Law of Three Forces and redivide the three octaves into twelve Triads as follows: (Figure 3, overleaf)

Please note that the lowest note sounded in the triad above becomes the highest note of the one below; so that the twelve matters are in continual movement, going up or going down. Further, the principle of Resonance operates here, so that harmonics are sounded *simultaneously* as in a chord on the violin.

* * *

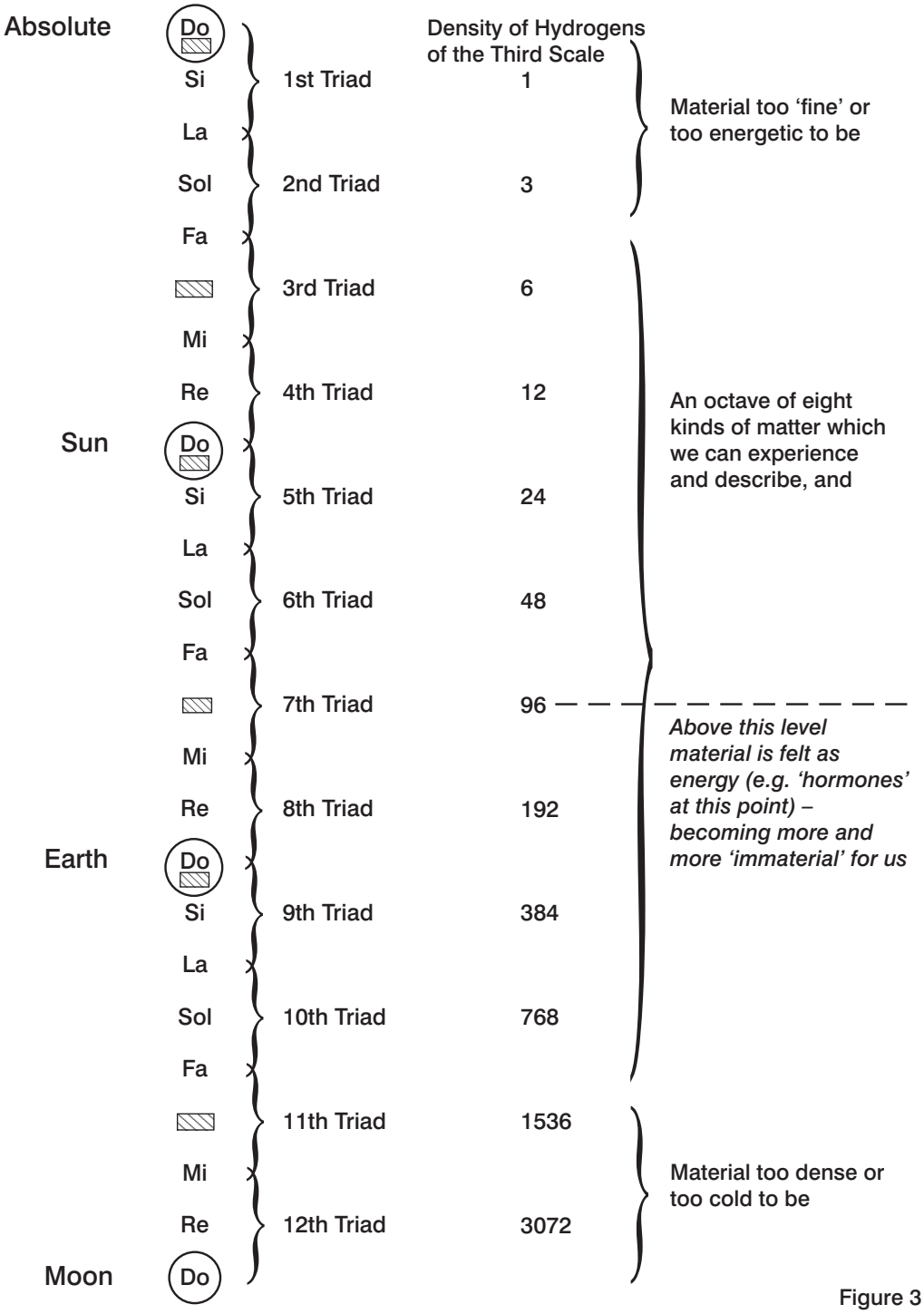
Absolute
Do
Si
La
Sol
Fa
Mi
Re
Sun
Do
Si
La
Sol
Fa
Mi
Re
Earth
Do
Si
La
Sol
Fa
Mi
Re
Moon
Do
1st Triad
2nd Triad
3rd Triad
4th Triad
5th Triad
6th Triad
7th Triad
8th Triad
9th Triad
10th Triad
11th Triad
12th Triad
Density of Hydrogens of the Third Scale
1
3
6
12
24
48
96
192
384
768
1536
3072
Material too 'fine' or too energetic to be
An octave of eight kinds of matter which we can experience and describe, and
Above this level material is felt as energy (e.g. 'hormones' at this point) – becoming more and more 'immaterial' for us
Material too dense or too cold to be

Figure 3