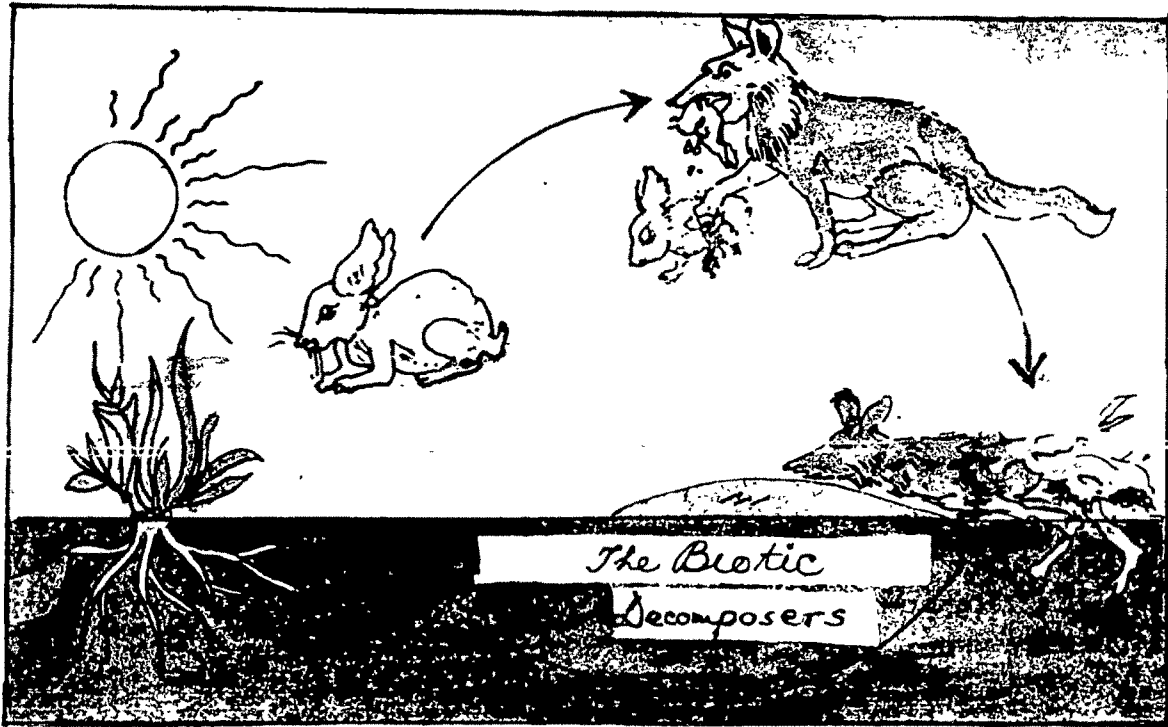




الدرس الخامس: الموت والعفانة

CHAPTER V: DEATH & DECOMPOSITION



A.T.INAM

CHAPTER FIVE

DEATH & DECOMPOSITION.

Death is the last stage of human life cycle. A life which is born, has to die, as Qoran says:

كُلُّ نَفْسٍ رَأَيْتَهُ الْمَوْتَ تَف... ه (4- آل عمران - 185) (17-11- أنبياء - 35) (21- العنكبوت - 57)
إِنَّكَ بِبَيْتٍ وَإِلَهُم مَّيْتُونَ ه (23- الزمر - 30) وَهُوَ الَّذِي يُحْيِي وَيُمِيتُ... ه (18- المؤمنون - 80)
كَا (24- المؤمن - 68)

There is no time limit for death. A life may die within the mother's womb or by way of 'abortion' or 'still' born. Death may occur in 'childhood' or in 'youth' age or at the age of retirement i.e. old age, as Qoran says:

ثُمَّ نَخْرِجُكُمْ طِفْلًا ثُمَّ يَتَّبِعُكُمْ أَشْدَّكُمْ ه (17- الحج - 5) وَجَاءَتْ سَكْرَةُ الْمَوْتِ بِالْحَقِّ... ه (26- ق - 19)

When a person dies, he/she is converted into the elements, of which he/she was made of, and ultimately becomes a part of soil. As Qoran says:

أَيُّدُكُمْ أَنْتُمْ، إِذَا مِتُّمْ وَكُنْتُمْ تُرَابًا وَعِظَامًا أَأَنْتُمْ فَظَرَجُونَ ه (18- المؤمنون - 35)
فَأَنْتُمْ لَا تَسْمَعُ الْوَعْدَ وَلَا تَسْمَعُ الْأُصْغَارَ إِذَا وَلَوْ أَمَدًا يَرِينَ ه (21- الروم - 52)

Allah The Almighty says in Qoran that when a man dies, he decomposes to the constituents of which he is made of:

إِذَا مِتْنَا وَكُنَّا تُرَابًا... ه (26- ق - 3) إِذَا كُنَّا تُرَابًا إِنْ أُنْفِىَ خَلْقٍ جَدِيدٍ... ه (13- العنكبوت - 5)
مِنْهَا خَلَقْنَاكُمْ وَفِيهَا نُعِيدُكُمْ... ه (16- طه - 55)

Therefore, this chapter be divided into two subchapters: i) Death & ii) Decomposition.

Death is a flash point, when human life turn to a body without soul while, Decomposition is a long process/period between death & re-birth, during which soil bacteria act upon to decompose the body.

أَفَمَنْ يَمُوتُ يَحْيِي... ه (23- الصافات - 58)

sub chapter i

Death.

Allah The Almighty repeats many times that a life is to die, once born:

كُلُّ نَفْسٍ ذَائِقَةُ الْمَوْتِ قَدْ ۝ (4- آل عمران - 185) قُلْ إِنَّا الْمَوْتُ الَّذِي نُفْرِطُ بِهِ إِنَّهُ مُلَقَّبُكُمْ ۝
(28- الجمعة 8)
كُلٌّ مِّنْ عِندِهَا فَإِنَّ ۝ (27- الرحمن - 26) قُلِ اللَّهُ يُحْيِيكُمْ ثُمَّ يُمِيتُكُمْ ۝ (25- الهامزة)
وَأَنَّا لَنَحْنُ نُحْيِي وَنُمِيتُ وَنَحْنُ الْوَارِثُونَ ۝ (14- الحجر - 23)
وَهُوَ الَّذِي أَحْيَاكُمْ ثُمَّ يُمِيتُكُمْ ثُمَّ يُحْيِيكُمْ ۝ (17- الحج - 66)

The following Qoranic Verse* indicates the earliest possible death that may take place within mother's womb i.e. death of Embryo**:

يَوْمَ تَرْزُقُهَا تَدْ هَلْ كُلُّ مُرْضِعَةٍ عَمَّا أَرْضَعَتْ وَتَضَعُ ذَاتَ كَهْلٍ فَهَلْهَا ۝ (17- الحج - 2)
فَأَحْيَاكُمْ ثُمَّ يُمِيتُكُمْ ۝ (1- البقرة - 28)

In the following Qoranic Verse, Prophet Ibrahim a.s. admits that he has to die by Will of Allah The Almighty:

وَإِذَا مَرَضْتُ فَمُؤَيَّدٌ لِّمَوْتِي ثُمَّ يُحْيِي ۝ (19- الشعراء - 80-81)
إِذْ قَالَ إِبْرَاهِيمُ رَبِّ اجْعَلْ لِّي آيَةً ۝ (3- البقرة - 258)

Qoran say that Almighty Allah alives you & terminates your life:

ثُمَّ إِنَّكُمْ بِعَدِّ ذَلِكَ لَمَبْتُؤُونَ ۝ (18- المؤمنون - 15) وَأَنَّهُ هُوَ أَتَاكَ وَآخِي ۝ (27- النجم - 44)
وَهُوَ الَّذِي يُحْيِي وَيُمِيتُ ۝ (18- المؤمنون - 80) ۝ (24- المؤمن - 68)
ثُمَّ إِنَّمَا أَنَا بَشَرٌ ۝ (30- عبس - 21) إِن هِيَ إِلَّا أَعْيَانُ الدُّنْيَا مَمُوتٌ وَنَحْيَا ۝ (18- المؤمن - 37) ۝
(25- الجاثية - 29)
بِالَّذِي خَلَقَ الْمَوْتَ وَالْحَيَاةَ ۝ (29- الملك - 2) أَلَمْ يَتَوَقَّى آلَ نَافِثَةَ ۝ (24- النمر - 42)
لَا إِلَهَ إِلَّا هُوَ يُحْيِي وَيُمِيتُ ۝ (25- المدخان - 8) إِن هِيَ إِلَّا أَمْشَاتُ الدُّنْيَا ۝ (25- المدخان - 35)

*This Verse also informs that i) Breast feeding & ii) bearing Embryo within the Uterus of females, are charecterstics of Mammals.

**Qoran justifies that Embryo becomes alive, when almost all body parts & systems are created and 'spirit' from Almighty Allah is blown into Embryo. This generally happens at the end of 3rd month after conception.

Death ... contd...

The following Qoranic Verses indicates that there is no certain, when death may conclude the life. Therefore, death may occur, when you are in your mother's womb i.e. Abortion. If mother carries well and Fetus is safe, there may be a chance of 'still' born baby. Delightfully, if baby is born safely, he or she enters to youth-age via 'infancy' & 'childhood'. Death may too occur during these stages. The ultimate phase of human life is old age, which is a useless life stage and very near to death: (٢٨-المنفكون-١٥) هـ قَبْلَ أَنْ يَأْتِيَ أَحَدَكُمُ الْمَوْتُ ... هـ (٢٧-الواقعة-٦٥)

ثُمَّ نُخْرِجُكُمْ طِفْلًا ثُمَّ لِتَبْلُغُوا أَشُدَّكُمْ وَمِنْكُمْ مَنْ يُتَوَفَّى وَمِنْكُمْ مَنْ يُرَدُّ إِلَىٰ أَرْزُلٍ الْغَمْرِ هـ (١٧-الحج)
ثُمَّ يُفْرِجُكُمْ طِفْلًا ثُمَّ لِتَبْلُغُوا أَشُدَّكُمْ ثُمَّ لِتَكُونُوا شُيُوخًا وَمِنْكُمْ مَنْ يُتَوَفَّى مِنْ قَبْلُ هـ (٢٤-المؤمن-٦٧)
وَاللَّهُ خَلَقَكُمْ ثُمَّ يَتَوَفَّاكُمْ وَمِنْكُمْ مَنْ يُرَدُّ إِلَىٰ أَرْزُلٍ الْغَمْرِ هـ (١٤-النحل-٧٥)
كُلٌّ مِنْ عَلَيْهَا فَأَيُّ هـ (٢٧-الرحمن-٢٦) هـ نَلَّامًا ذَا بَلْغَتِ الشَّرَاقِ هـ (٢٩-القيامة-٢٦)

Qoran says that all living creatures on earth has to die:
اللَّهُ يَتَوَفَّى الْأَنْفُسَ حِينَ مَوْتِهَا وَالَّتِي لَمْ تَمُتْ فِي مَنَامِهَا فِيمِنْكُمْ الَّتِي قُضِيَ عَلَيْهَا الْمَوْتُ وَيُرْسِلُ الْآخَرَىٰ...
Human dies at the time of his/her death only. When human is alive, sleep is the rehearsal of his/her death, since most of the body sys*...

At the time of human death, Angel takes out 'spirit' from body as per Allah The Almighty's instruction:

حَتَّىٰ إِذَا جَاءَ أَحَدَكُمُ الْمَوْتُ تَوَفَّتْهُ رُسُلُنَا وَهُمْ لَا يُفَرِّطُونَ هـ (٧-الانعام-٦١)
فَكَيْفَ إِذَا خَوَّفْتَهُمُ الْمَلَائِكَةُ يَضْرِبُونَ وَجُوهَهُمْ وَأَرْبَابَهُمْ هـ
اللَّهُ الَّذِي خَلَقَكُمْ ثُمَّ رَزَقَكُمْ ثُمَّ يُمِيتُكُمْ هـ (٢١-الروم-٤٥)
(٢٦-محمد-٢٧)

If you die or are killed in the way of Allah, The Almighty will forgive your sins:

وَلَبَن قُتِلْتُمْ فِي سَبِيلِ اللَّهِ أَوْ مِتُّمْ لَمَغْفِرَةً مِنَ اللَّهِ وَرَحْمَةً هـ (٤-ال عمران-١٥٧)

... إِلَىٰ أَجَلٍ مُّسَمًّى هـ (٢٤-النمر-٤٢) ... *tems become dormant during 'sleep'.

sub chapter ii

Decomposition.

After death, the lifeless human body decomposes gradually into fine particles of 'elements', of which human was made of, as Qoran says:

ءَاِذَا كُنَّا عِظَامًا وَّرُفَاتًا... هـ (١٥- بنى اسرائيل - 49&98)
 ءَاِذَا مِتْنَا وَكُنَّا تُرَابًا وَّعِظَامًا... (١٨- المؤمنون ٤٢) ء (٢٣- الضحى - 16,53) (٢٧- الواقعة 47)

In Paradise, water & milk will not decompose & spoil as on this world ly earth, water & milk spoil due to bacterial attack:

نَمَلُ الْجَنَّةِ الَّتِي وُعِدَ الْمُتَّقُونَ فَيَمُوتُ الْمُرْتَابُ غَيْرَ سَائٍ ؕ وَاَنْتُمْ مِنْ لَبَنٍ لَمْ يَتَغَيَّرْ طَعْمُهُ... هـ (٢٦- محمد - ١٥)

Qoran confirms the complete decomposition of dead body into fine particles of elements, which ultimately becomes part of soil; of which human was made of. And will be reborn before the day of 'judgement':

اِذَا مَرِئْتُمْ اَنْ مَمَرَقٍ لَا اَتَكُمُ لَغِيٌّ خَلَقَ جَبْرِيْدٌ ؕ (٢٢- سبا - 7)
 لَنَمَرِّتَنَّهُ ثُمَّ لَنَنْسِفَنَّهُ فِى الْيَوْمِ نَسْفًا (١٦- طه - ٩٧)
 اِنَّا نَحْنُ نُحْيِى وَنُمِيتُ وَاِنَّا لَافْصِيْرُوْهُ (٢٦- ق - 43)

Allah The Almighty reminds human to remember the 'base' of his 'origin' i.e. water & soil of which he/she is made of, & decomposes into the same, and will be reborn the same way:

وَضَرَبَ لَنَا مَثَلًا وَّنَسِيَ خَلْقَهُ ؕ قَالَ مَنْ يُّحْيِى الْعِظَامَ وَهِيَ رَمِيْمٌ هـ (٢٣- يس - 78)

The Qoran says that the earth hosts both alive & dead. Bacteria are 'living' decompose the dead human, animals & plants. There are De-Nitrifying Bacteria too. Water & minerals are the dead creatures found beneath the earth: (المرسلات 26, 25) (٢٩- المؤمنون ٢٥)

Decomposition ... contd...

Unfaithfuls & Nonbelievers question to The Almighty; will we be re-created again, once we are (dead &) converted to the fine constituents of earth:

وَقَالَ الَّذِينَ كَفَرُوا إِذَا كُنَّا تُرَابًا وَآبَاءُ وَنَحْنُ أَهْلُ الْمَقَابِرِ هِيَ (20- النمل- 67)
 يَقُولُونَ ءَأَنَّا لَمَرْدُودُونَ فِي الْحَافِرَةِ ءَإِذَا كُنَّا عِظَامًا تُخْرَقُ هُ (30- النزع- 19)
 وَلَئِنْ مِتُّمْ أَوْ قُتِلْتُمْ لَإِلَى اللَّهِ تُخْشَرُونَ (4- آل عمران- 158)
 ءِذَا مِتْنَا وَكُنَّا تُرَابًا فَبِأَيِّ ذِيكٍ رَجِعُ بُعِيدٌ ه (26 ق- 3) أَيْحَسِبُ الْإِنْسَانُ أَنَّهُ لَنْ يَجْمَعَ عِظَامُهُ ه (29- القيامة)

Allah The Almighty says in Qoran that Human has been created from 'soil', when he/she dies, decomposes & converted into fine particles i.e. constituents of which he/she is made of.

قَالَ يَبْنَؤُا تَحْيَوْنَ وَبَيْنَمَا تَمْوُتُونَ وَ مِنْهَا تُفْرَجُونَ ه (8- الاعراف- 25)

Qoran narrates that the donkey & dog of 'Kahaf' companions complete decomposed, while their food & water remained unspoilt:

نَاظِرًا إِلَى طَعَامِكَ وَشَرَابِكَ لَمْ يَتَسَنَّهْ وَانْظُرْ إِلَى حِمَارِكَ وَلْيَجْعَلَ آيَةً لِلنَّاسِ وَانْظُرْ إِلَى الْوَلَدِ كَيْفَ نُنشِزُ بَنَاتَهُ تَكْسُوهُنَّ أَلْحَمًا... ه (3- البقرة- 259)

It means, human has been created from the constituents of soil, which return back to the earth, after death & decay. At this stage, human life cycle completes i.e. from 'soil' to 'soil'.

مِنْهَا خَلَقْنَاكُمْ وَ فِيهَا نُفِيْدُكُمْ... ه (16- طه- 55)

The next 5th continued chapter, contains the scientific details of death & decay of human body.

CHAPTER FIVE

DEATH & DECOMPOSITION ... contd...

Regarding death & decay, science belief is the same as per Qoranic commandments. Qoran says that 'Will' of Allah is 'prime' factor, while 'reason' is 2ndry factor, regarding death. Science emphasises the 'reason' of death only.

The reasons of death may be: i) Abortion, ii) Malnutrititions, iii) Accident, iv) Disease & v) Old age, etc.

ABORTION:

Death during 'fetal' stage. There are many reasons for this type of death. Genetic transmission is one of the main reasons. Not keeping in mind the 'safety' of fetus, may also be the reason of abortion or 'miscarriage'. Shocks* during pregnancy, also influences 'abortion'.

MALNUTRITION:

Death may occur due to malnutrititions at any stage of life, right from 'fetal' to 'old' age.

ACCIDENT:

Accident, specially the 'fatal' is also a source of death. There is no time limit or for this sort of death.

DISEASE**

There are thousand & thousand types of diseases. Most of the disease are curable due to the development in the fields of science & medical technologies. But some diseases are still fatal.

OLD AGE:

Old age is last hope of life, after that death is natural phenomenon

* (١٦-الصحج - 2)

** (١٩-الشعراء - 81-80)

Death & Decomposition ... contd...

Decomposition ... contd...

The dead body of human begins to decompose after death. During this process air-borne 'Bacteria' play important role, which is not hygienic. Therefore, as per Islamic tradition, dead body is buried beneath the soil, where soil bacteria decompose. The study of soil indicates that it consists of: i) minerals, ii) dead organic matter, iii) living micro-organisms, iv) soil solution forming surface film over solid soil particles & v) soil atmosphere filling all spaces.

The Qoranic Verse* has already declared the existence of the above mentioned.

Normally, mineral fragments are derived from the underlying rocks by physical & chemical weathering, while dead organic fractions are derived from the remains of plants & animals including human. For which living micro-organisms play important role.

Soil Solution is derived from rain falls, which dissolves mineral salts. Soil atmosphere is much affected by movement of soil water. When rain runs, atmosphere is forced out, while soil drains or dries fresh air is drawn in. Root respiration & soil organisms add carbon dioxide to the soil atmosphere. That is why soil atmosphere has higher CO₂ content than free air, while oxygen content is normal in uppermost layers, while lower in the depth. Anaerobic bacteria exists this sub-soil region.

LITTER: Litter is the uppermost layer of soil, contains raw humus with many specific fungi & bacteria. The early stages in breaking down Cellulose tissues of dead plants are readily accomplished by Fungi & Cellulose digesting Bacteria. The later stages of decomposition, which form humus, depend more on the activities of Bacteria.

* (29-المسئلة-25,26)

Decomposition ... contd...

HUMUS: Humus is most important part of dead organic matter; is a residual material left when most of the organic waste has been consumed by microbial growth. Humus is a 'colloidal' mixture, holds water and prevents soil from drying out. It helps mineral particles stick together to form 'crumbs', so allowing good aeration & drainage favouring growth of higher plants & micro organisms.

As long as organic matter is being added to soil & more micro organisms are active, more humus is formed. Humus gradually disappears, by over cultivation or insufficient manuring. Then soil loses its structure, which ^{is} a calamity beyond repair.

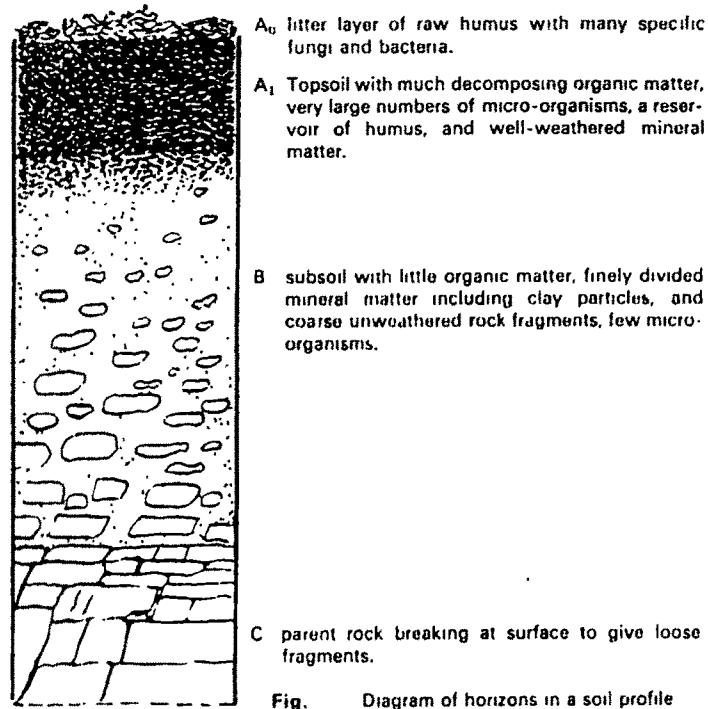
COMPOSITION OF HUMUS: Humus is mixture of compounds, contains 10% of Nitrogen, which can be recovered as Amino Acid, since Protein of the body is destroyed with great rapidity, when added to soil. The Amino Acids appear to be combined in some way with a lignin residue from decomposed plant skeletal tissue. Lignins are stable cyclic carbon compounds, remain when Cellulose of Xylem & Fibre has been digested.

10% of Humus consist of various Polysaccharides. An important fraction of Humus is formed of Humic & Organic Acids. Certain amount of Phosphorus & Sulphur are also found in humus. The slow break down of humus releases N , P & S, which become available to plant root. Thus humus is reservoir of Nutrients.

SOIL FORMATION: The soil forming factors are: a) Climate & b) Biotic Factors. The biotic factors are i) vegetation & micro organisms, ii) human & animal interference & iii) parent rock & topography, which is of less importance.

Decomposition ... contd...

SOIL PROFILE: An old well developed soil shows a distinct stratification into horizons, which can be seen clearly in profile on the side of any cutting through the surface strata:



SOIL MICROFLORA:

The topsoil houses a vast population of interacting & interdependent micro-organisms, in 'Rhizosphere'; a region near living roots. There are 50-5000 million true bacteria found in each gram of soil. Actinomyces or filamentous bacteria are next most important, then follow the fungi & Myxomycetes. Fungi have about same mass as the bacteria, Algae & Protozoa may also be fairly numerous, but of less importance. The most fertile soils usually contain the greatest number of micro-organisms. Bacteria generally flourish in neutral to alkaline soil, while fungi are usually favoured by acid conditions.

It is scientifically observed that soil organisms are capable of decomposing every known kind of organic substance. Under special circumstances, Peat & Coal collect & form deposits, but strong drugs

Decomposition ... contd...

disinfectants & plastics disappear when buried in soil. Even soil-organisms are able to decompose hormones, antibiotics, insecticides & weedkillers, whose survival show negative impact on agriculture.

CARBON & MINERAL SALTS CYCLE:

Dead plants, animals & human mainly consist of Carbohydrates & a high C/N ratio, are rapidly attacked by Cellulose digesting bacteria & fungi, which oxidise most of the carbohydrates to H_2O & CO_2 . Gas directly return to atmosphere, while C/N ratio remains in humus. Phosphorus & Sulphur locked up in organic compound in living organisms are released back to soil as sulphate & phosphate during the process of decay. Metals such as Ca, K, Mg & many others, together with SO_4 & PO_4 radicals, cycle directly, as they are taken up by plants & incorporate into organic compounds and again return to the litter. Subsequently, they are released by microbial digestion of cell material and washed back into topsoil.

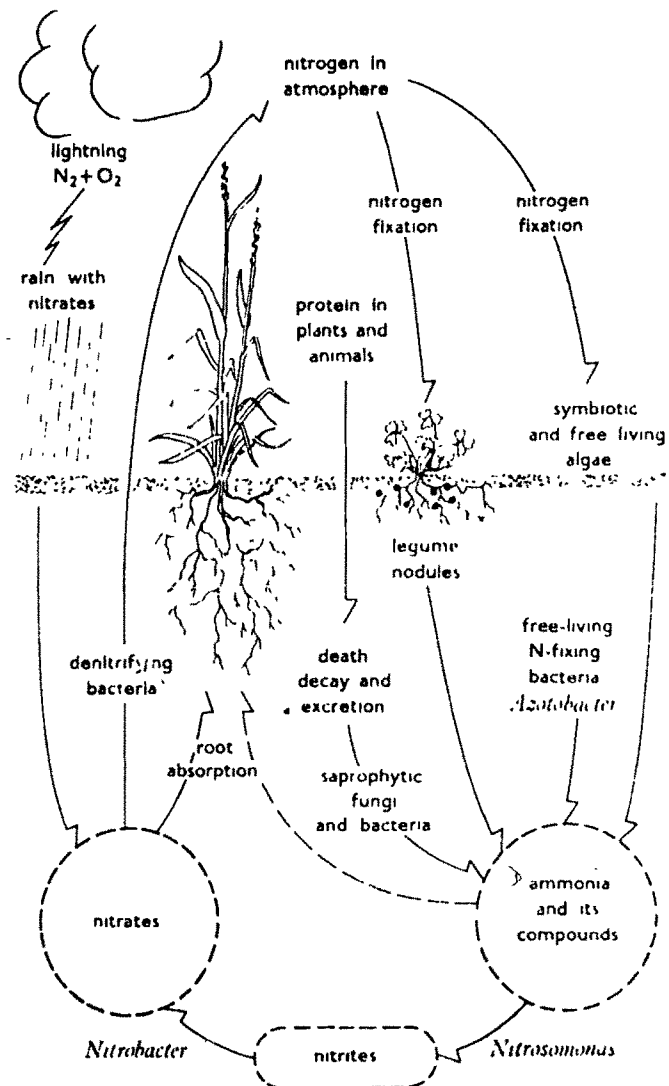
NITROGEN CYCLE:

Out of all elements plants absorb, Nitrogen is in greatest quantity and has biggest impact on growth. Fertility of soil depends on N content & microbial number. Almost 80% atmosphere is Nitrogen, but plants absorb it in the form of Nitrate & Ammonia. When Nitrogen is absorbed as Nitrate, it reduces to NH_3 before it can be used for Amino Acid and, then Protein synthesis. When dead cell material is returned to soil, Protein is quickly digested by saprophytes, which absorb some of N_2 into their own cells and also, liberate NH_3 into the soil. If NH_3 is directly re-absorbed by plants, a short cycle is completed, which is a rare case. NH_3 is used up almost as quickly as it is formed, that is why NH_3 is rarely traceable in soil.

Decomposition ... contd...

NITRIFICATION:

A chain of Chemosynthetic Autotrophs*, one** of which oxidise NH_3 to Nitrite. Nitrobacter oxidises it to Nitrate. These two kinds of organisms derive their energy from oxidations & use HCO_3^- ions, as a basis for Carbohydrate synthesis. Thus the continuous process of NO_3^- formation is called Nitrification, following the liberation of NH_3 by soil saprophytes from fresh organic waste or from the humus reservoir.



*Bacteria that obtains energy from chemical oxidation.

**Nitrosomonas; a chemosynthetic autotrophs bacteria.

Decomposition ... contd...

DENITRIFICATION:

The opposite process of NO_3 reduction is carried out by all organism which absorb NO_3 and incorporate this N_2 as NH_3 into their cell protein, but many soil organisms, specially under conditions of intense microbial activity where soil is richly manured, use NO_2 as a H acceptor & librate N_2 gas, or occasionally Nitrous Oxide. The Bacteria which use NO_2 in this way are different organisms*, which are active under both aerobic & anaerobic conditions. Considerable amooounts of molecular Nitrogen are thus released from soil, the process is called Denitrification.

This way, human life cycel completes when the elements of human dead body turn to soil of which he/she was made of.

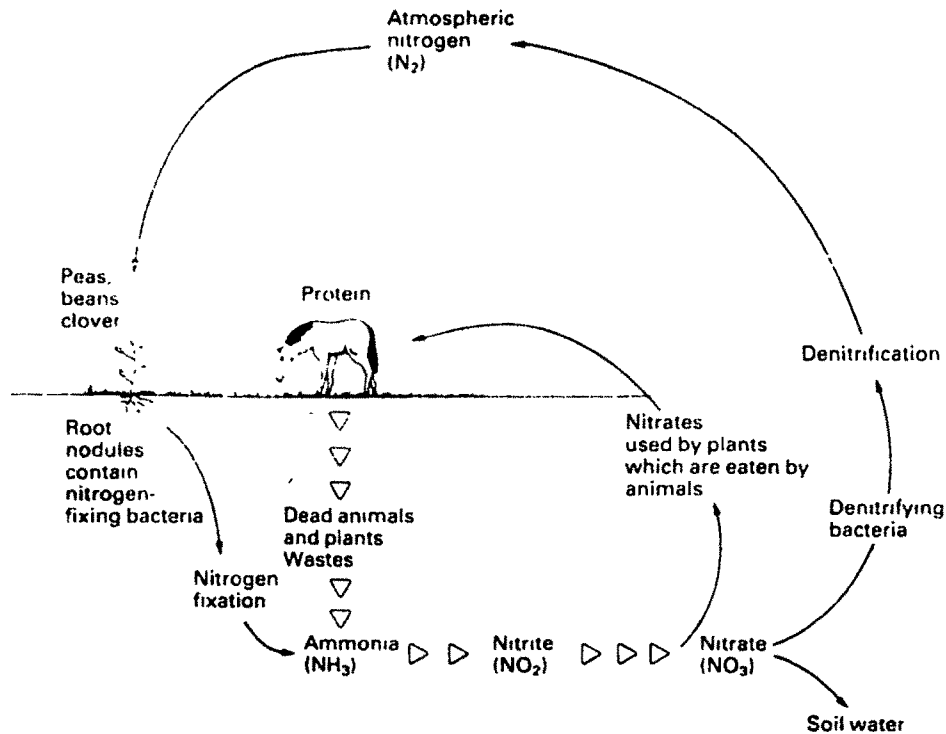


Fig. The nitrogen cycle

*aerobes & anaerobes.