328en03

3

BIOLOGICAL AND CULTURAL SHAPING OF MIND AND BEHAVIOUR

We often wonder how do we behave in a wide variety of ways. Sometimes we feel happy; sometimes sad. The equipment with which we are born – the brain, nervous system and sensory – motor system is central to the functioning of organism. Earlier, it was believed that there is some inner spirit in all of us that controls our behaviour. Today, we know that our actions and bodily movements take place in an environment and are jointly determined by the socio-cultural environment and the nervous system. We are born in a culture which is already in existence. As a result, the functioning of the system is often mediated by the socio-cultural environment. In a way, our nervous system acts like an engine in the automobile that controls every movement and speed of the vehicle. The socio-cultural context provides opportunities to act in specific ways and, inturn, shapes the way we think and act. Any analysis of human behaviour will remain incomplete without taking into account the interplay of biological and cultural factors.

OBJECTIVES

After studying this lesson, you will be able to:

- relate the connections between evolution, heredity and environment;
- describe the structure and functions of cell and neuron;
- describe the structure and functions of nervous system;

- describe specific areas of the brain and their related control of behaviour;
- describe endocrine glands and their functions; emphasizing secretions of gonads and overy;
- explain transmission of hereditary characteristics;
- describe the relationship between culture and gender role;
- understand the nature of socialization and acculturation processes focus on behavior in terms of gender identity.

3.1 EVOLUTION, HEREDITY AND ENVIRONMENT

If you look around yourself you will notice that you are surrounded by a variety of organisms differing in form and behaviour. They include human beings, insects, reptiles, birds, anthropoids, mammals and fish etc. The experts in biology believe that the organisms existing today are outcomes of the process of evolution that has taken place in the course of a long span of time spanning over several million years. The idea of *evolution* was given by an English biologist named Charles Darwin. The physical structure and pattern of behaviours found today is a consequence of the evolutionary history. According to this view *adaptation* to environment is central to the process of evolution. The traits and behaviours which enable an organism to survive are retained and others are extinguished. It is known as the process of *natural selection*.

Let us see what are the features that distinguish human beings from other species. The first feature is called *bipedalism*. It indicates the ability to walk upright. The second feature is *enciphalization*. This indicates increase in brain size and proportion of specialized brain tissues. The third feature is development of *language*. This ability is undoubtedly a key to effective communication and cultural achievement of human beings.

Heredity refers to the genetic endowment that a human body inherits from her parents. It is often known as biological blue print. A person's genetic potential or genetic code interacts with the environment to influence and shape the pattern of behaviour. Environment includes the physical and social surrounding in which a person lives, grows and conducts himself/ herself. The context of family, school and community within which a person lives, interacts with the genetic characteristics to determine the pattern of behaviour displayed by him or her. You will study more about the genetic bases of behaviour in a subsequent section of this lesson.

3.2 THE CELL AS THE BASIC UNIT OF LIFE

Have you seen a brick and then a building in the process of its construction? The architect designs and the mason keeps brick by brick and the building comes into

existence. In the same way, our body is also made up of cells. As the brick is the smallest unit in a building so is a *cell* — the small unit in a human body. Each living being whether it be a plant, animal or human being, is made up of these small units, called cells. There are certain differences between the cells of different living beings as well as the cells in the different parts of a living organism. All cells contain a fluid called *cytoplasm* and a *nucleus*, and are enclosed in a *cell membrane*. Operations within the cells and the co-ordination among various cells make the life possible. The life of all the living beings is, therefore, based upon the working of the cells.

3.3 THE NEURON

The cells that compose the nervous system are known as *neurons* and *glia*. Only the neurons or nerve cells transmit information (impulses) from one location to another. Appreciating a sunset, enjoying the music, thinking of some loved one at a distant place or solving a problem– all these acts reflect the co-ordinated actions of thousands or millions of neurons. These nerve cells collect information from the environment by means of receptors and then combine the information as well as make the action possible. The neurons also store information and lead to behaviour.

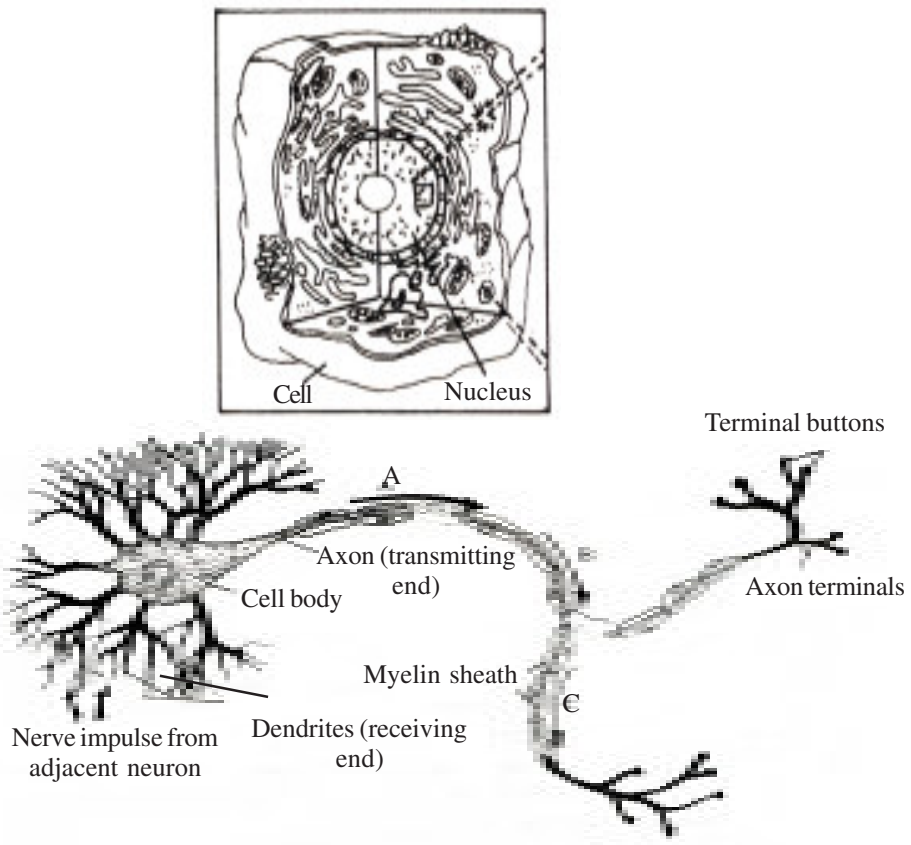

Fig. 3.1: *Cell and Structure of a Neuron*

Neurons make up half of the volume of the brain. Glial cells constitute the other half of the nervous system. Neurons in the central nervous system (CNS) are of various shapes and sizes, but most neurons may have features in common. There are three main structures of a neuron. They are the *cell body* (soma), the *dendrites*, and the *axons*. A brief description of these structures is as follows.

(1) The **soma**, or the *cell body*, is the largest part of the neuron. It regulates and controls the metabolism and maintenance of the entire cell. The soma also receives impulses from other neurons. The cell body contains the *nucleus* that manufactures the chemicals used to transmit signals.

(2) The **dendrites** are the branches that extend from the cell body and spread out in complex ways. The neurons receive much of their input through dendrites via *synaptic connection* from other neurons. The cell sending information releases a chemical that influences the activity of the receiving cell. Information passes from synaptic terminal to the dendrites or cell body, but does not go the other way.

(3) The **axon** is a long fibre that leads away from the cell body. The axons send signals to the dendrites, other neurons or to muscles and glands. The axons make neural pathways in the (CNS). The axons are insulated by *myelin sheath*. Myelin sheath is made up of glial cells.

The Nerve Impulse

An information is carried through a series of electrical impulses that travel from one neuron to another. These are called nerve impulses. They are sent to the specific areas of the brain where sensations take place. The axons or nerve fibres do not carry sensations like pain or cold. The sensations occur only when the information reaches the brain.

Synapse

The regions where impulses cross from one neuron to the other are called synapses. The synapses are thus junctions between the neurons. Through the gap at synapse (*synaptic cleft*) signals are transmitted from one neuron to another. The sending side of synapse is axon terminal where as the receiving side of synapses is the tips of the branching dendrites. The chemical substances that facilitate the transmission of the signals are called neurotransmitters.

3.4 TYPES OF NEURON

Depending upon the function, the two major types of neurons are receptor and motor neurons. Receptor neurons bring information into the nervous system. Such

information is brought through senses. The motor neurons carry out the orders of brain for muscular movements such as chewing, walking, writing and so on which are under our conscious control. The reflex actions are mediated by the spinal cord. Breathing and eye blinking are involuntary action. These involuntary actions are controlled by motor neurons.

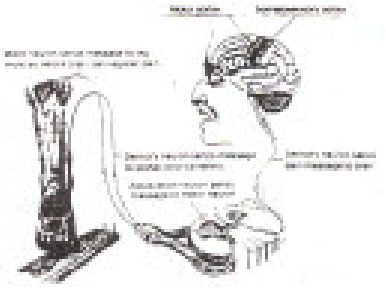

Fig. 3.2: *Reflex Activity*

Try this yourself

You can initiate an eyeblink reflex in a friend. For that you need orange peels. Hold the peel at about five or six inches from his/her eye and squeeze it into the eye. Your friend will exhibit an in -voluntary reflexive blink of the eye.

INTEXT QUESTIONS 3.1

1. What are the features that distinguish human beings from other species?

   _____

   _____

2. Describe the main parts of the structure of a neuron.

   _____

   _____

3. State whether the following statements are True or False:

   (i) Only the neurons transmit information from one location to another. True/False

   (ii) Nerve cells collect information from environment by means of receptors. True/False

   (iii) Neurons do not store information. True/False

4. Fill in the blanks with appropriate words:

   (i) Neurons make up _____ of the volume of the brain.

   (ii) A cell has three parts. They are _____, _____and _____ .

3.5 NERVOUS SYSTEM

The nervous system is made up of billions of neurons. It is responsible for receiving, processing and sending of information. All the functions of the body are controlled by the nervous system. It has two parts i.e. *central* and *peripheral*.

The Central Nervous System (CNS) consists of the brain and the spinal cord. The spinal cord is the narrow column that starts at the base of the back and extends up through the neck and the base of the skull. The brain is surrounded by a protective skull. The CNS is responsible for sending nerve impulses and receiving the sensory information.

The Peripheral Nervous System consists of the group of neurons which transmit information between the CNS and the rest of the body. It is responsible for carrying nerve impulses to and from the body. The peripheral nervous system is further divided into two parts:

- Somatic system, and
- Autonomic system

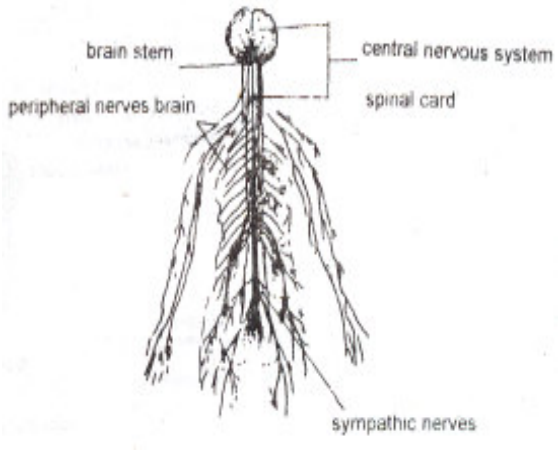

Fig. 3.3: *Nervous system*

The nerves in the somatic system connect the brain and spinal cord with voluntary muscles of the body. This system senses and acts upon the external world. It consists of both sensory and motor neurons. Sensory neurons transmit incoming signals to the CNS. These signals originate in the receptor cells, and are located in the sense organs such as eyes and ears. Motor neurons, whose cell bodies lie inside the spinal cord, transmit outgoing signals from the spinal cord. The somatic nervous system controls the skeletal muscles that help the movement of the body.

The neurons in the *autonomic nervous* system control the involuntary actions in the body such as those performed by heart, stomach and liver. The autonomic nervous system is composed of the *sympathetic* and *parasympathetic* systems. The sympathetic nervous system dominates in emergency situations. This system controls our emotions. It responds by increasing blood sugar level, heart rate, and blood pressure and slows the process of digestion. These changes enable us to cope with stressful situations. The parasympathetic nervous system dominates the activities in relaxed situations. However, the two systems work together in many situations and make adaptation possible.

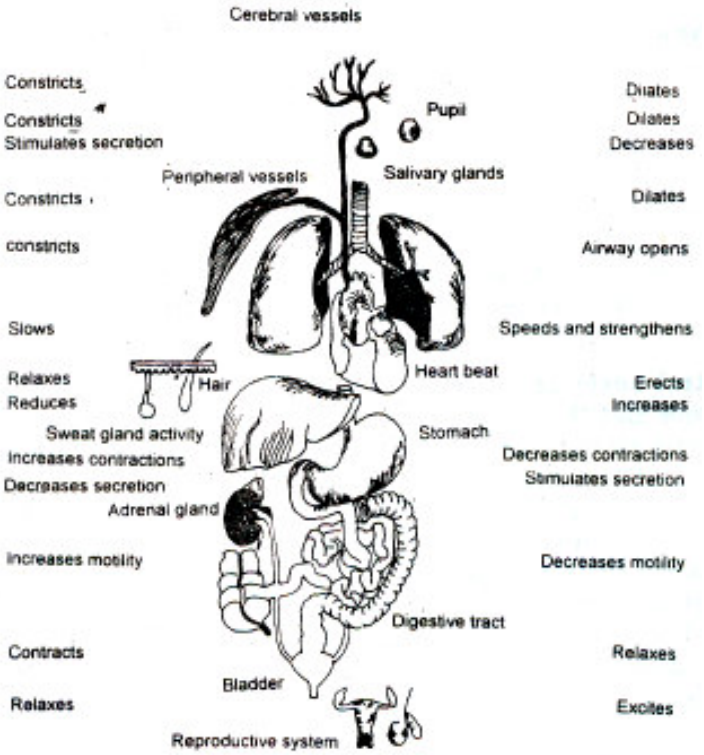

Fig. 3.4: *The Autonomic Nervous System*

3.6 THE CENTRAL NERVOUS SYSTEM (CNS)

The CNS consists of the brain and the spinal cord. You have learned that the neurons in spinal cord can produce reflex action. Also, it acts as a relay station. It sends information from sensory neurons in the body to the brain and takes motor commands back to the muscles. The severe injury to the spinal cord usually results in loss of sensation and paralysis at levels below the points of injury. It has two major components, namely *Gray matter* and *White matter*.

The Gray Matter found near the center of the spinal cord processes the information and the White Matter found in the outer layers, which contains axons, transmits information to and from the brain.

If tea is brought to you in steel glass and you suddenly try to pick it up, do you realize how hot your fingers feel?

In this case, the heat receptors in our skin are stimulated and fire nerve impulses. The incoming information from the receptors in our hand travels through neurons to our spinal cord where it enters the gray matter in the center of the cord. It travels through the white matter to our brain. The brain analyzes the sensory

information and initiates a voluntary movement leading to response such as dropping the glass.

The Brain

If you would like to get a feel of the physical structure of the brain you might try this. Stand infront of the mirror and draw an imaginary line across the front of your face running from left ear through both your eyebrows to your right ear. The bulk of your brain is located above this line.

The brain is the primary part of the CNS, occupying the cranial cavity. It is surrounded by the skull for protection. The brain weighs an average of three pounds (about 1.4 kilograms) comprising about 97% of the entire CNS. The brain is connected to the upper end of the spinal cord and has three structures: the *cerebrum*, the *cerebellum*, and the *brain stem* leading to the spinal cord. The brain stem is also divided into the *medulla oblongata*, the midbrain, and the *pons*.

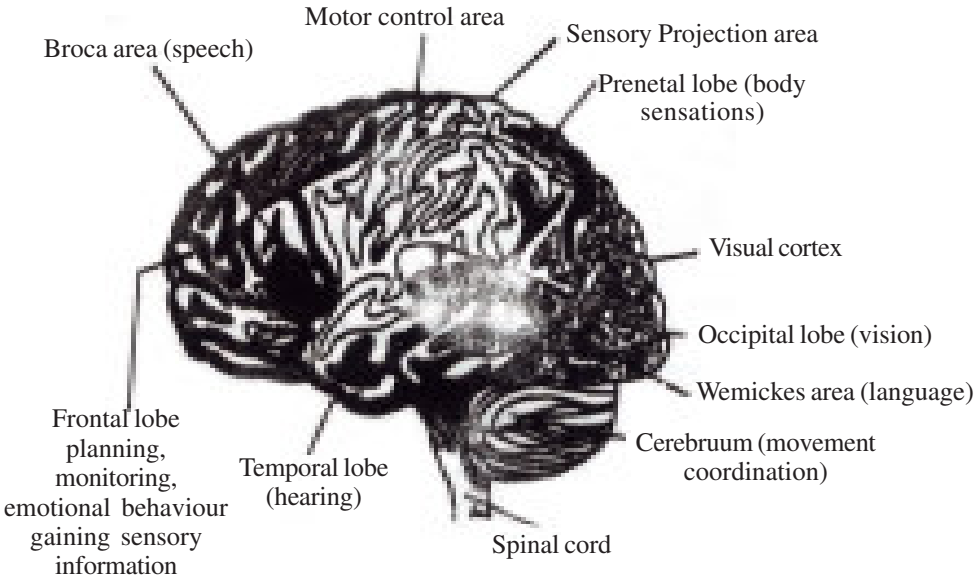

Fig. 3.5: *Diagram of human brain*

Do you know?

Our brain appears something like a walnut.

Our brain contains at least 15 billion nerve cells (neurons).

The cortex has the "decision making center" that influences what we do feel and think?

The major psychological function of our brain is to process information.

(a) Cerebral Cortex

The uppermost layer of the brain is called cerebral cortex (see Figure 3.5). The brain is divided into two halves: the *left hemisphere* and *right hemisphere*. They resemble the halves of a walnut. It is interesting to note that each hemisphere processes information about the opposite side of the body. For example, when you write with your right-hand, the motor information enabling your right hand to move comes from your left hemisphere. The cortex consists of a thick layer of densely packed neurons. It has large area to be fitted into the skull cavity and therefore it has a large number of turns and twists. The turns and twists make the structures like hills and valleys, which are called *gyri* (singular gyrus) and *sulci* (singular sulcus).

The brain has two basic functions: cognitive functions (learning, memory, thinking, etc.) and the regulation of physiology of the body.

(b) The Lobes of the Cerebral Cortex

The cerebral cortex is divided into four lobes: *frontal, occipital, parietal* and *temporal*. Various centres in these lobes are respobsible for the awareness of environment and responses to the changes in the environment.

The visual information is received by the primary visual cortex located in the occipital lobe. Any damage or disorder to eye, optic pathway or to the visual cortex results in visual disorders. Similarly, the auditory information is received by the primary auditory cortex located in the temporal lobes. Any damage of our ears, auditory pathways, and to the auditory cortex results into hearing problem. The information from body senses is received by the somatosensory cortex that is located in the parietal lobe.

The right and left cerebral hemispheres of cortex receive sensory information, and control the muscular action of the opposite side of the body. The two hemispheres play crucial role in higher mental functions including language, processing and integration of sensory information, planning, decision making, and reasoning.

INTEXT QUESTIONS 3.2

(A) State whether the following statements are True or False:

(1) The central nervous system consists of brain and the spinal cord. True/False

(2) The spinal cord has three components. True/False

(3) The brain is surrounded by the skull for protection.
True/False

(4) The lower most layer of the brain is called the cerebral cortex.
True/False

(B) Fill the blanks with appropriate words:

(1) The two major divisions of the nervous system are _____ and _____.

(2) Each hemisphere of brain process information about the _____ side of the body

(3) The CNS consists of the _____ and _____.

(4) The peripheral nervous system carries the _____ to and from the body.

(5) The somatic system controls the _____ that help the _____ of body.

Do you know?

Brain Research Techniques : Imaging through the living brain

Several techniques are used to know the functioning of our brain. These techniques are also used to find out if there is any thing wrong in the working of the brain. Some of the commonly used techinques in the living brain system are as follows:

CAT scan: *In Computerised Axial Tomography a weak x-ray beam is rotated about the person's head to produce image. A computer then plots the image on a display. The CAT scan differentiates and localises the extent and site of brain tumours, blood clots, and areas of cerebral damage.*

PET scan: *In Position Emission Tomography a radio active glucose related substance is injected into the blood supply of the brain. The images of the brain are obtained by the consumption of the glucose in the brain. The motion picture in PET scan is generated by the computer.*

NMRI: *In Nuclear Magnetic Resonance Imaging technique, the brain is placed in an intense magnetic field. The changes in the magnetic properties of the cells are then recorded. From these recorded properties again the image is generated.*

3.7 THE ENDOCRINE SYSTEM

You must have heard about some diseases caused by high or low level of hormones in the body. For example, diabetes is caused by the low level of a hormone called *insulin*. Similarly, the level of another hormone, *thyroxin* controls our behaviour. Hormones are chemicals secreted directly into our blood streams. The hormones are secreted by endocrine glands. This system is a collection of ductless glands that controls various body functions. The endocrine glands secrete chemicals that send signals by releasing hormones directly into the bloodstream. The endocrine glands and their major functions are shown in the Box. The location of these glands is shown in the Figure 3.6. Some of the major glands are as follows:

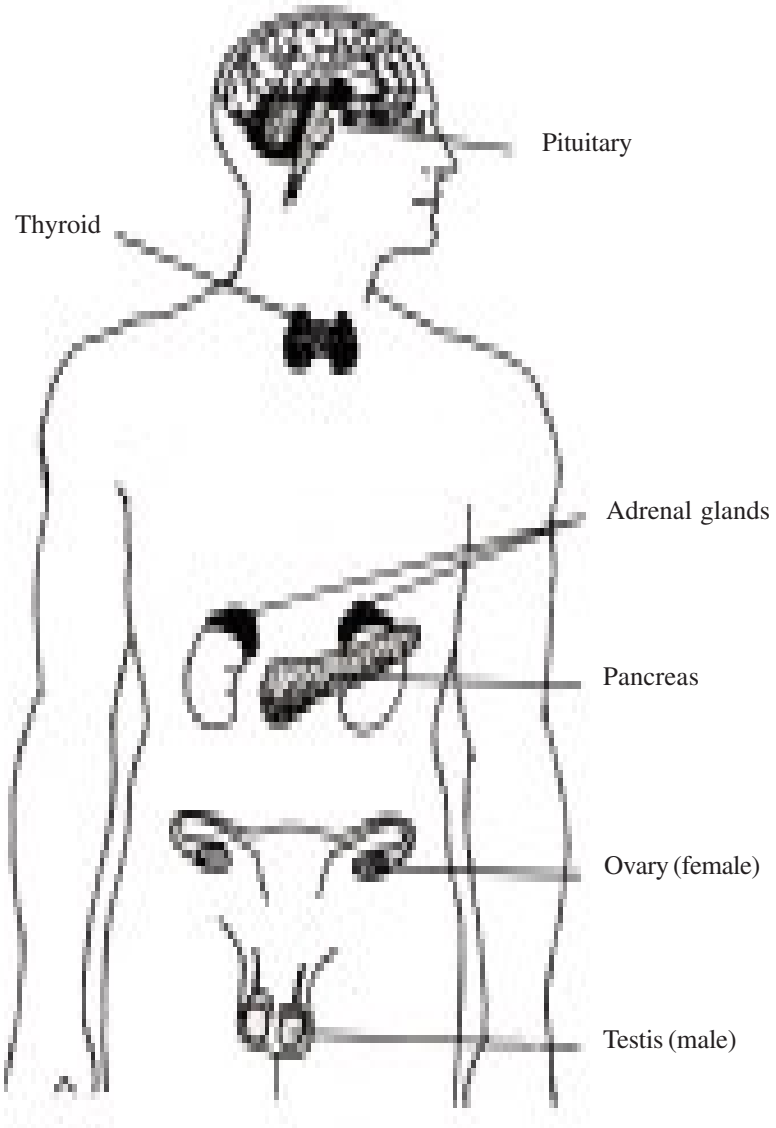

Fig. 3.6: *Endocrine glands*

The **pituitary gland** is reddish-grey, about the size of a pea, located in the brain. It is referred to as the "master gland" because some of the hormones it releases stimulate and regulate the hormonal action of other endocrine glands.

The **thyroid gland**, located in the neck, releases a hormone that controls metabolism (transformation of food into energy). It also affects energy level and the mood.

The **adrenal gland** is located above the kidney. It secretes adrenalin and other hormones during emergency situations.

The **pancreas**, is located near the stomach. It produces insulin that controls blood sugar level.

The **gonads** control sexual development and sexual behaviour. The male gonads (testes) are located in the testicles. These glands produce the hormone known as **testosterone**. The female gonads (the ovaries) produce the hormone known as **estrogen**. In both sexes (male and female) these hormones not only control the sex drive, but also regulate the development of secondary sex characteristics, like beards in men and breasts in women.

The androgens (such as testosterone) are generally found at higher levels in males than in females, while the oestrogens (such as oestradiol) are generally found at higher levels in females. However, it is important to understand that, androgens are not 'male hormones' nor Oestrogens' female hormones'. Both classes are found in both sexes.

The Endocrine Glands and their Functions

Gland	Function
Pituitary	Growth: metabolism (transformation of food into energy (Master gland); regulation of adrenal, thyroid, and gonadal hormone secretion; milk production in females.
Thyroid	control of growth, energy level and our mood
Adrenal	Adaptation to prolonged stress
Pancreas	Control of blood sugar level
Gonads	Reproduction, primary and secondary sex characteristics; sex drive

3.8 GENETIC INFLUENCES ON BEHAVIOUR

We often talk about people inheriting certain characteristics. Like Neena has inherited her mother's blue eyes, or Ashok has inherited his father's curly hair. We expect tall parents to have tall children. The inheritance of such characteristics is called heredity. The branch of biology, that deals with how heredity works, is called genetics. Behavioural genetics is the study of inheritance of behavioural characteristics.

All living beings are unique as they differ from the members of other species (cats differ from dogs and humans differ from animals). An organism's physical appearance and behaviour varies from individual to individual. The former is known as *genotype* and the later are termed as *phenotype*. Every individual's phenotype is the result of the interaction between its genotype and the environment. The physical development is in large part based upon the genes we inherit from our parents. It is largely believed that the genetic characteristics transmitted by genetic factors set limits on the capabilities of organisms.

The present genetic theory is based upon the work of Gregory Mendel. He showed that the characteristics of parents are passed on to their offspring through genes. These genes might produce visible characteristics in the offspring, or might be carried for possible transmission to another generation. The children of one set of parents do not necessarily inherit all the same characteristics.

The union of two cells, the egg from the mother and the sperm from the father is the beginning of a new individual. These two cells like all others carry within them material that forms a definite number of rodlike units called *chromosomes*. The chromosomes carry hereditary factors or genes. The cell nucleus that contains the *chromosomes* is made up of deoxyribonucleic acid (DNA) in combination with protein compounds. Chromosomes are pairs and each chromosome contains 1000 or so genes that also occur in pairs. (see Fig. 3.7)

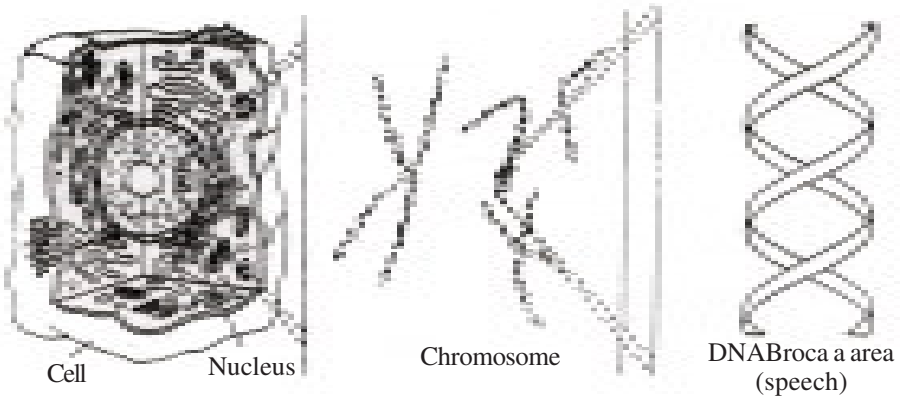

Fig. 3.7: *Cell, Chromosome and DNA*

The process of inheritance is based upon the process in which the offspring receives one of each gene pair from each parent. Some genes are dominant and some are recessive. An individual with *dominant gene* for a particular characteristic displays that characteristic, whether only one or both genes in the pair are dominant. In case of a *recessive gene*, the characteristic associated with it does not show up unless both genes in the gene pair are recessive. Some characteristics are produced by a single gene or gene pair. Multy-factor inheritance involves the action of several genes.

The scientists working in the area of *genetic engineering* are trying to find out the genetic code so as to manipulate the cell structure. One of the examples of this type of research is the phenomenon of *cloning*. The research is basically aimed to solve the problem of genetically transmitted diseases or behavioural abnormalities. Moreover, through genetic manipulation scientists are trying to control certain undesired behaviours and to facilitate the desired behaviour. The genetic manipulation has so far been tested widely in plants and to some extent in animals. The human research on genetic manipulation is under strict control of ethical principles.

INTEXT QUESTIONS 3.3

1. What are hormones?

   _____

   _____

2. Why pituitary is called master gland?

   _____

   _____

3. What is the process of inheritence?

   _____

   _____

3.9 CULTURE AND BEHAVIOUR

Behaviour of human beings become meaningful in their cultural context. In terms of shared meanings and practices different cultures guide us in choosing our goals and conducting ourselves in various situations. The patterns of behaviour found in different cultures emerge in the context of interactions of the people which are

encoded in different forms. Various traditions, customs and cultural artifacts display these codes. They help to interpret and make sense of the behaviour of people belonging to a given culture. Thus a community may subscribe to certain beliefs and values. They may become part of the social consciousness of the people of that community.

When the existing natural things change with human efforts may be known as cultural change. Culture is said to represent what is contributed by human beings. It has *subjective* as well as *material* aspects. Culture often transmits from one generation to other. The subjective part of culture involves values, norms, roles etc. the material part of culture deals with tools, sculpture, and various artifacts.

People are born in various cultures which provide a set of stimuli, languages and practices. It is through these aspects of culture that we are made what we are. The diversity in behaviour noted in different societies is to a large extent attributed to the cultural diversity. This happens because culture selectively facilitates certain patterns of behaviours and requires its members to inculcate them. Culture works two ways i.e. it provides opportunities as well as puts constraints on us. Depending on the particular eco-cultural context various behaviour patterns and skills are encouraged or discouraged.

It is essential to know that human behaviour is shaped by the biological potential as well as environmental contributions. However, the two interact and jointly determine behaviour in a culture which gives a specific shape or direction to behaviour. For instance, a child grows in a family, gets formal education in school and plays with toys. A moment's reflection will make it clear that families, schools and toys vary across different cultural settings. An extended and a nuclear family puts different demands. Similarly schools in metropolitan cities and remote villages differ in terms of organization of classroom, interaction pattern and other inputs. The toys too differ in metro and remote village. It may, however, be noted that cultures do not remain static. While each culture tries to maintain its identity, it also interacts with other cultures and is influenced by them. Thus there is both continuity and as well as change.

3.10 THE PROCESSES OF SOCIALIZATION AND ACCULTURATION

Now let us talk about socialization process.

Socialization is the process through which cultures are maintained and transmitted across generations. Thus agencies such as parents, media, school, peer group and religious institutions deliberately shape children and people to develop specific behaviour patterns. They make conscious and deliberate attempt to define the expectations of society. The parents, for instance, adopt various styles of parenting which vary in the degree of affection and degree of control exercised on children.

It has been found that authoritarian and permissive parenting interfere with the healthy development of personality. Parents use reward and punishment to promote or discourage children's behaviours. Children also learn by imitation and modeling the significant others (e.g., parents, teachers) present in this environment. They also identify with others and internalise the characteristics of important persons they observe. The role models play very important role in shaping the behaviour of growing children.

The process of acculturation deals with the influence of a new or different culture on a given culture. Thus it characterizes the process of contact between cultures. Such contacts take place under various conditions including colonization, invasion, international trade, travel and migration. Indian society presents a good example of acculturation. The British impact on language, dress and education is clearly noticeable.

The process of acculturation demands people to learn many new things and socialize in different ways. Acculturation is often found quite stressful. People respond to acculturative stress in different ways. They may assimilate with the new culture or maintain separate identity. Also, a new kind of integration may emerge which will involve the elements of old as well as new culture. In other situations people may experience marginalization and separation.

INTEXT QUESTIONS 3.4

1. In what ways culture shapes human behaviour?

   _____

   _____

2. Who are the main agents of socialization?

   _____

   _____

WHAT YOU HAVE LEARNT

- Human behaviour is an outcome of the interplay of evolution, heredity and environment. Evolution through natural selection leads to changes in the life of species. Human evolution is characterized by bipadelism, inciphalization and development of language.
- We study the functioning of our body and brain with the help of our brain itself. We receive sensation through our senses and react by the actions of our

muscles and glands. Both sensation and control of our actions are mediated by our brain. Every organism including human being is made up of small units called cells. These cells constitute the basic unit of life.

- The nervous system is made up of neurons. Sensory neurons carry information from sense organs to the central nervous system. Motor neurons carry command from the brain to the glands and muscles of the body. All the neurons have cell body, dendrites (branch like extensions) and axons that carry information to other neurons. Synapses are junctions between axons of one neuron and the dendrites of the other.
- The nervous system consists of the CNS (brain and spinal cord) and the peripheral nervous system. The peripheral system is further divided into somatic and autonomic nervous system. Somatic system is responsible for receiving the information through sensory receptors and for our actions through the glands and muscles. The autonomic nervous system consisting of the sympathetic and parasympathetic parts acts to mobilise in response to threats and then for returning the body to the normal state.
- The cerebral cortex has four lobes: frontal, occipital, parietal and temporal. The occipital lobe is specialised for vision. The parietal lobe is involved in the sense of touch and the sensations from own body. The functions of frontal lobe include co-ordination of movement, planning, attention, social skills, etc. The temporal lobe is important in audition and language. The right and the left cerebral hemispheres are specialised for various higher order functions.
- The endocrine system is a collection of ductless glands that control various bodily functions through the secretion of hormones.
- Genetics is the study of how traits are inherited, or passed on, from parents to the offspring. Studies in genetics suggest that a substantial portion of the variation among individuals on many psychological attributes such as intelligence and personality are heritable.
- Human behaviour can be meaningfully understood in a cultural context. Culture consists of the man made part of environment. It has subjective and material aspects. Cultures represent meanings and practices which are transmitted from one generation to the other. Cultures do not remain static. They are maintained through the process of socialization. The parents, peers and schools, etc., act as agents of socialization. The contact with other cultures leads to the process of acculturation. The contact may lead to assimilation, isolation or integration in relation to the culture in contact.

TERMINAL EXERCISE

1. Describe the structure and function of a neuron.
2. Describe the functions of central nervous system.

3. Describe the functions of endocrine system.
4. How are the behavioural characteristics transmitted from parent to their children?
5. Using examples describe the role of culture in shaping human behaviour.

ANSWER TO INTEXT QUESTIONS

3.1

1. bipedalism, encephalization and language
2. cell body, dendrite, neuron
3. (i) True (ii) True (iii) False
4. (i) half (ii) cytoplasm, nucleus, cell membrane

3.2

(A) (1) True (2) False (3) True (4) False

(B) (1) Central, peripheral (2) opposite
(3) brain, spinal cord (4) information
(5) sceletal muscles, movement

3.3

(1) Chemicals secreted into our blood streams.

(2) It regulates hormonal action of other indocrine glands.

(3) It is based upon the process in which offspring receives one of each gene pair from each parent.

3.4

(1) By guiding the choice of goals, providing codes for intrpretation of behaviours, and by facilitating selectively certain patterns of behaviour.

(2) Parents, Teachers, Peers, Media.

HINTS TO TERMINAL EXERCISE

1. Refer to section 3.4
2. Refer to section 3.6
3. Refer to section 3.7
4. Refer to section 3.8
5. Refer to section 3.9