Ever since the inception of life primordia, there has been constant interaction between biotic and abiotic components of life with environment, which resulted in the evolution of different species on this planet. This evolution not only affected the flora and the fauna but was also responsible for agricultural and industrial revolution especially in last two millenniums. The agricultural revolution changed the culture of human being with a transition from non vegetarian to vegetarian diet. However agricultural revolution and food production, which grew parallel to the cultural evolution of the society, got affected by spurt of physical and environmental disaster and natural calamity. Human race, which evolved through various coastal area as well as bank of great rivers remain dependent upon sea food because it’s readily availability, however those who migrated to the hill and plain area had to put hard effort for cultivation and preservation of the food during hostile weather. This interaction between food and environment led to the development of skilled labourers, who not only protected the forest and natural flora, which were traditionally used for food, but also deforested to create newer soil for cultivation of crop.

The earlier system of agriculture was primarily based upon the technique which required assistance from larger mammals like horse, buffalo and bull, which became the integral component of the agricultural growth, whereas smaller mammals like sheep goat and different forms of birds
Introduction

continued to remain part of the non vegetarian food items. These raw food items had many advantages, however they also had disadvantage of accumulating certain electrolyte, fat and protein, which could be a causative factor in certain diseases. Better farming techniques and temptation to produce more by increasing the fertility of the soil led to invention of chemical and synthetic fertilizers, which further contaminated the soil and water with heavy metal and trace elements, which led to accumulation of certain toxic electrolytes in human system and resulted into many diseases.

In last two millennia the major breakthrough was industrialization and its effect on human civilization. The concept of conversion of static energy into kinetic energy was the major invention by human being which led to mechanical transformation and generation of machines which were initially driven by natural sources such as solar energy, wind mills and hydro power. In the beginning of 16th century electromagnetic forces were recognized and its association with steam and mechanical engines led to establishment of mechanical forming, engine driven irrigation and hydraulic system, which were latter on used in the transportation and distribution of potable water and organized system of sanitation. All these revolution changed the spectrum of life and cohorts of the individuals started migrating in search of better opportunity at far distance places. Due to invention of steam engine mining became an important industry, which was the mother of many metallic ores, basic chemical elements as well as petroleum products. These revolutions had created an opportunity for majority of the population to take up hard manual work, segregation of laborers into different community and class difference of the worker in the society. Many of these manual workers have to be in active operation of the factory or industries, which required continuous uninterrupted working, whereas there were organizers, managers and the elite class of supervisors who work in different environmental
atmosphere and became white collar workers. These two different class of people became the integral component of the social milieu and were interdependent to each other in spite of the white collar individual became the privileged class and indirectly ruled over blue collar worker. The elite class of the society member did not prefer to migrate, whereas labourers, farmers and skilled workers had to move far of distance places in order to search better opportunity and often resulted into acquisition of privileged area in form of war and revolution. The migration of skilled and unskilled population from one geographical area to other demanded some modification in life style as well as in food habit in the area of new settlement and often they had to compromise with hostile environment either on seashore, bank of river, high altitude, deserts or dense forest. These physical factors had initially adverse effect on the health of the migrants and newer settlers, but over the period of centuries and decades the individuals learned to acclimatize. There were physiological adaptations in response to intense heat, freezing cold and torrential rain. Accordingly food habits also changed and those who could better adapt against the environmental odds ultimately became the victorious and survived.

By this time better understanding of human physiology could suggest to adopt preventive measure to remain healthy and productive to sustain the progeny as well as the individual culture by modifying food consumption, preservation and its storage, which grew another parallel industry and was also responsible in shaping the cultural aspects of the society.

In the 20th century majority of industrialized developed world changed their dietary habit from non-vegetarian to vegetarian and the immergence of fast food culture led to outburst of obesity, which was further complicated by lack of manual work consequences to mechanical industrialization. This culture has disadvantages that most of the non-vegetarian food required
processing and the refrigeration technology became one of the important assets in food preservation. Many preservatives had also deleterious effect on health and the natural preservative lost its relevance because they could not be sustained in fast changing environmental conditions. Thus the fast food culture resulted into high consumption of fat with added salt and spices and especially in non-vegetarian population the least opportunity of high potassium containing diets, which were in abundance in fresh crop and fruit. On other hand vegetarian diet consumer had to preserve their food with extra salt, oil and spices, which also created an artificial situation in which consumption of natural food became less and less. All these factors where further compounded by nature of job as well as temperature and humidity.

The native individuals, who confined themselves to their primitive place and did not migrate remained in better state of health rather than those, who migrated in different environmental area to which they were not acclimatized. At many places both of the population grew together but resulted into two different socio-cultural milieu. Those who accepted the challenges of environment and lived at par with the natural climatic variation, adapted the food habits and worked accordingly, ultimately sustained the challenges and could survived in the society. Many western countries, who migrated and ruled over the other continent started analyzing the effect of environment on their soldiers as well as immigrants and formulated various preventive measures to be taken in the adverse hostile environment. However developing and under developed nations, who had more than one geographical areas did not undertake such studies and were affected by natural calamity and food scarcity at the time of sudden migration or aggression by other population. The understanding of these environmental factors are now much important when the concept of global village is emerging fast and one has to understand the environmental constrain of a new place, where he has to survive. Sodium (Na\(^+\)) being one of the important
constituents of food in the form of common salt or its base both in vegetarian and non-vegetarian diet affects milieu interior of the biological system in energy transport system through membrane, micro and mille electro potential gradient, diffusion and excretion to make living being in a healthy states. In human it is also responsible to maintain the water balance as well as blood pressure by conserving or excreting salt through skin and kidney during ambient temperature variation, humidity and rain fall. The body surface area, body mass index and food also have important contribution in regulating temperature and water balance at different work place and altitudes. The role of other electrolytes is also equally important like potassium, magnesium and chloride in relation to its consumption in form of food and beverages. The other component of the food like protein, carbohydrate and fat also contribute in the electrolytes pool of the body by donating various ions, which regulate the health of individual and keep them acclimatized against environmental variation.

Henceforth the present study has been conceive to explore the major biological and physiological parameter, which contributes for better preservation of health as well as food in two different bio-diversified situations in our country to understand the role of these electrolytes and food components in relation to ambient temperature variation, humidity and work place with special reference to excretion of sodium, chloride and other ions consumed with food.