



## ***Mizaj* (Temperament) and Habitat Diversity: An Integrative Perspective from Greek-Arab Medicine**

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**ABSTRACT:** Animal temperament plays a key role in determining habitat selection, survival, and adaptation. Aristotle, regarded as the founder of zoology, systematically described biodiversity and recognized that animals differ in structure, behaviour, and habitat according to their inherent nature. In Greek-Arab medicine, this inherent nature is termed temperament (*Mizaj*), an innate characteristic that governs the physical and functional attributes of each species. Habitat provides the environmental conditions necessary for survival and reproduction, and each species occupies habitats suited to its temperament. This review integrates Aristotelian and Unani concepts of temperament with modern ecological principles to explain habitat diversity.

**KEYWORDS:** Temperament (*Mizaj*), Habitat Diversity, Aristotle, Biodiversity.

### **INTRODUCTION**

The word “Biodiversity” is described as the different types of living things, from genes to categories of life, and which found in all over ecosystems. <sup>1</sup>Biodiversity and species variety are frequently considered as synonyms; the former is much more included environmental, spatial, and temporal relationships among organisms and their dwellings.<sup>2,3</sup>

The Greek philosopher, Aristotle (384-322 BC)<sup>4</sup> was the first who systematically observed and described biological diversity in his writings.<sup>5,6</sup> He was earliest one to classify the living organisms, which he called “the ladder of life” and also studied fish gills and cuttlefish.<sup>7</sup>

According to Avicenna (980-1037 AD)<sup>8</sup>, temperament is a quality developed by action and reaction of opposite qualities of components of any compound; which are broken down in smallest particles to facilitate the proper intermixing of all the elements (Arkan). When these components interact by their respective powers (qualities), conditions are achieved which is found in equal proportion in all the components of the compound.<sup>9</sup>

Greek Arab philosophers explained the types of temperament which indicate the diversity in structure, function, habitat, and living pattern of life.

These types are- (i) the most befitting temperament of a species as a whole.(ii) The most befitting temperament of a member of the particular species.(iii) The most equable temperament of a particular race.(iv) The most befitting temperament of a member of the race. (v) Equable temperament of an individual as a whole.(vi) The equable temperament of an individual during youth.(vii) The equable temperament of an organ.(viii) The equable temperament of an organ in a physiological functional state.<sup>10</sup>

### Habitat diversity according to temperament

Any life cannot live without any kind of dwelling.<sup>11</sup> Any defined place where an organism lives is known as habitat. Habitations are the conditions and resources that exist in an area that produces occupancy, including survival and reproduction.<sup>12,13,14</sup> Actually species diversity is due to habitat diversity. Habitat explains the presence of a different life to attributes of the physical and biological settings.<sup>13</sup> Different creatures seek different environments<sup>15</sup> for their survival that is accounted by ideas of Ancient Greek Arab philosophers. They explained that animals select the habitat according to their temperament.

Additionally, seasons of different temperament may alter the relationships of habitat and species diversity to the ecosystem multi functionality.<sup>16</sup> According to “habitat heterogeneity hypothesis”<sup>17,18,19,20</sup> an increase in the number of habitats at a different scale, and an increase in structural complexity of habitat engenders increased species diversity.<sup>2</sup> This hypothesis is accounted by the thought of Greek philosophers regarding four basic constituents (fire, air, water, earth) as these are taking part as prime components for the origin, functions, survival of species and other characteristics. And described particular habitat selection is due to proper mixing of qualities of prime components i.e. hot, cold, dry and moist. According to Greek philosophy, the habitat of different species of life is also different because of specific temperament which is suitable for their origin and existence<sup>10</sup> (Table 1), this account by the contemporary sciences,<sup>21</sup> evaluated that all the required features for reproduction and survival of species are different for all species of life and particular habitat e.g. wildlife habitat is not serving as suitable habitat for other life.<sup>21</sup>

**Table 1**

S. No	Dominance of element	Temperament	Habitat	Characteristics
1.	Earthy element	Cold dry relatively	Terrestrial	Stronger and well defined anatomical appearance, strong psychic reactions, lesser fearful, makes safe dwellings, fast maturity, strong parental care, less rational.
2.	Watery element	Cold wet relatively	Aquatic	Soft and flabby, not well defined anatomy, mostly fearful, easy movement due to specific exoskeleton, aquadynamic body shape, not makes safe dwellings, infrequent reproduction, late maturity, no parental care, <sup>22</sup> locomotive phenomenon and related organs present, <sup>23</sup> habitat preferences.
3.	Airy element	Hot wet relatively	Arboreal, areal	Aerodynamic body shape, flapping structure, flying capacity by wings, low

				weight, spongy bones, high heart rate to maintain blood circulation, highly emotional, intellectual, location learning capacity, makes safe dwellings. <sup>24,25</sup>
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Aristotle stated "Animals differ from one another in their manner of life, in their activities, in their habits, and their parts,"<sup>26</sup> supported by Galen (129-200 AD)<sup>27</sup> that, particularly in the context of presence of elements water, air, and earth.<sup>28</sup> He explained hotter and moister creatures were supposed to be more intellectual, while colder and dryer species were less.<sup>26</sup> Aristotle pointed out structural diversity, in some animals, the consistency of organs is soft, in other firms; some birds have a long beak, others have short; some have more feathers, and others have less. This is because of the dominance of a particular element that takes part to form the particular shape of an organ. Galen advised that the intermingling of four basic constituents will be in a balanced amount inequitable temperament specifically to the concerned. He also said that the quantities of these basic constituents are not always in the uniform ratio in the formation of organisms. This disparity is based on species, so in some species hotness is dominant, and in some other coldness or, moistness and or dryness. This disproportion of basic constituents decides origin, existence, and habitat of life; it is beneficial to the pertaining body and officiating to the beneficial temperament of organs of specific species.<sup>10</sup>

## CONCLUSION

The main conclusive remarks from the paper include, the habitat is one of the very basic needs for survival of any life. During the literature review, it was found that every organism has its specific habitat according to their temperament. It was also extracted the ancient philosophers like Aristotle, Galen, etc. were known to biodiversity and other characteristics of life. And they have explained valid reasons for diversities in life. It is a need of an hour to review the habitat diversity-related literature extensively.

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