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Accordance of William Morris Davis Theory with the Landscapes of the Earth Surface

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Abstract. The natural surface views of the earth's surface are actually like the broken mosaics that formed the earth's crust. The surface of the earth is composed of different views, which has been existed due to different internal and external forces of the earth's crust, such as destructive operations of the earth's surface, terrestrial operations, orogenic operations, folds, protrusions and number of processes that cause changes in the Earth's crust. The complexities of natural landscapes are greater than the simple buildings and flatness of the surface those collectively introduce the features of the surface. Landscapes are usually better explained by understanding the factors that cause them, because each of the terrestrial landscapes are remnants of various geomorphological factors that cannot be easily identified and need further investigation. William Morris Davis is an American geomorphologist who was the first to offer a general view of the Earth's appearance.

Keywords. Crust, Earth, Factors, Features, Folds, Landscape, Process

1.0 Introduction

The main factors that play a key role in creating different facades and buildings on the ground and cause different facades to be created on the ground are: the type of buildings, the processes of creation and the passage of time.

In general, the existing views of the earth's surface, in terms of structure and formation, include the following five stages: 1. Simple Landscapes 2. Compound Landscapes 3. Mono Cyclic Landscapes 4. Multi Cyclic Landscapes 5. Exhumed or Resurrected landscapes.

Internal forces of the earth which are: tectonics, volcanic, volcanoes and earthquakes and also external forces of the earth which include wind activities (storms, strong winds, round winds), water activities (floods, sea waves, tsunamis), Water and tides, Ice operations, snow and rain, glaciers and snow movements, landslides and pebbles falling from heights and sloping lands due to land gravity (gravity), have caused permanent changes in the earth's surface and they form different shapes on the surface of the earth. William Morris Davis is called the father of geomorphology because he has provided valuable scientific work and insights on contemporary geomorphology (Rice.T. J:1977). For example, the "complete cycle of river life" theory, which is specifically about how the seas operate in the Pennsylvania valleys in 1889, describes how the seas flow and their destructive activities. Which causes a change in the face of the earth, has

been discussed (Singh, Savindra:1998). "Geographical cycle" is another theory proposed by William Morris Davis in 1899. In this theory, Davis places more emphasis on the influence of the earth's external forces, while not underestimating the effectiveness of the earth's internal forces in shaping the earth's surface. External processes of the earth, such as weathering, are a set of destructive processes that cause surface destruction in different parts of the earth in the presence of climate (Ruhe, R.V:1975). "Slope Evolution" is another theory proposed by William Morris Davis. In this theory, on the one hand, he considers the flow of destruction in lands with slopes and valleys to be continuous, and on the other hand, he does not consider the rotation or period of destruction in lands with Milan as the same, because soil composition and land types are different (Agnihotri, S.P:1978). The main purpose of Davis and his general theory of the geographical model of the Davis school was to develop and expand the facades and structures of the earth, to plan systematic studies and to explain the geographical contents that were able to initialize the facades and structures of the earth (Singh, Savindra:1998).

2.0 Objectives:

- To find out the root for the various types of landscapes.
- To accordance the Davis theory with natural forms.
- To find out the force and factors for the changes comes on the Earth's surface.
- To find the easy way of studying of the landscapes.

3.0 Material and Methods:

The article has struggled to use from authentic and methodical books of Geography and published articles as the source and references. The data about *Accordance of William Morris Davis with the landscapes of the Earth* collected from different scientific books valid journal and is hope to help those who are interested in the field of Geography.

3.1 Study area:

According to Davis's views on facades and natural structures of the earth's surface and its protrusions, the factors influencing the creation of such facades on the earth's surface depend on these factors: 1-Structures, 2- Process, 3- Time. The above factors play a major role in the formation of facades and natural structures on the ground. This means that the earth's crust consists of different views such as: mountains, valleys, gorges, folds, fractures, hills, flat surfaces, etc. were formed by various internal and external factors of the earth, each Facades and buildings of the earth's crust may have been formed by the influence of several factors, which have their own types and formations.

Geological and geomorphological processes are considered as the main factors in creating the appearance and structures of the earth's surface and the changes that are revealed in them. Time is constraint (geological history) on the basis of which it is possible to identify old, evolving, and young facades and structures in the Earth's crust. These three factors are called the Trio of Davis (Singh, Savindra:1998).

The basis of the Davis periodic geographical model is based on the assumptions proposed by Davis: 1. Landscapes and structures on the ground include the production of internal or indigeneity processes of the earth that source from the internal forces of the earth and external

processes that source from the outside of the earth and include the destruction of seas, winds and glaciers. 2. The evolution of facades and structures on the surface of the earth includes states that have accepted the environmental changes in a series or sequence over time. 3. Natural flows of water from mountainous areas to the endurance of valleys, according to the general conditions of climatic conditions and rainfall, seawater flow in the valleys, the process of deepening the valleys in a degree (ridge) which has done from top to bottom. 4. Some of the short-term and temporary processes that the practice of lifting and raising by sedimentary soil masses in case of decreasing inclination and widening of valleys and seas, has also been mentioned by Davis. 5. The act of destruction and climaxing do not go hand in hand. In other words, the act of destruction does not begin until the act of culmination has developed. Many scientists in the fields of physical geography, geomorphology, and even geology opposed Davis's view and criticized it. Critics said, "When the process of raising a part of the earth's surface begins, the process of destruction begins at the same time. As the earth rises, it is exposed to the external forces of the earth, such as the flow of winds, which have more destructive properties and start the act of destruction (Rice.T. J:1977).

The American scientist William Morris Davis has divided his field of geomorphology into three stages (Youth, Maturity, and Old Age):

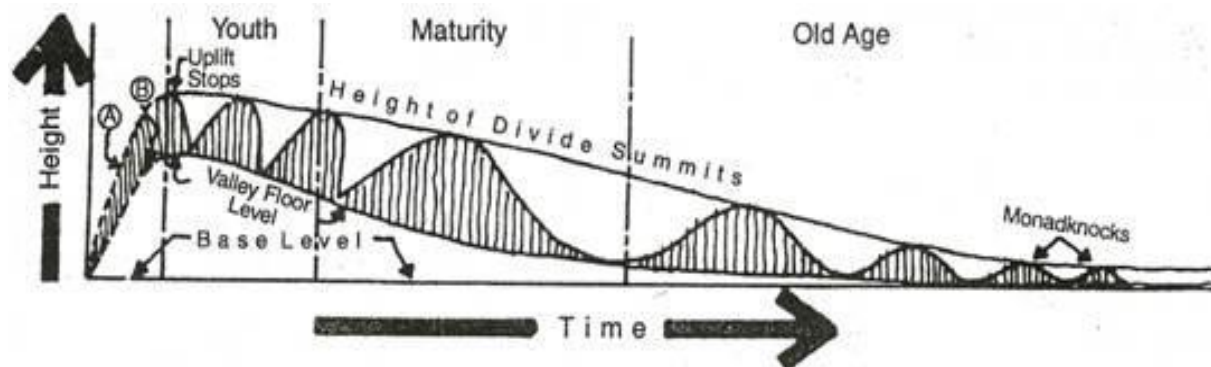


Fig.1 Geographical cycle which proposed by W.M. Davis

The above form shows the geographical model which showing the greatness or the peak point and the deep part of the valleys, at the peak of the natural view from the sea level and in the depth part, Shows the level of valleys or the low point above sea level. The horizontal lines show the passage of time and the changes that occur, while the vertical lines show the latitudes that determine the elevation of the area above sea level. In the same way, the adjacent facades represent the structures were formed due to various geological processes and the direct effects of the external forces of the earth, and in the final part, they have become flat areas (Ruhe, R.V:1975).

3.2 Youth stage:

The demolition process begins after the completion of the culmination operation or the height of the mass from the ground. The upper parts or the water section of the elevation are not more vulnerable to destruction because the flow of rainwater or melting snow and glaciers is short on one side and low on the other. When the small tributaries of the sea or its deputies join the main sea, destroying both sides of the sea and increasing its size, the seas also become longer.

Because it transports materials, soil, rocks and gravel, gravel and mud from the upper parts, the load of the seas increases, which contributes to the process of lateral and deep destruction of the sea, and also deepens the valleys, making deep, long and narrow valleys (Tricart, J:1974). The youthful stage is characterized by skipping from restorative destruction, which includes deeper valleys such as: 1- The slope or inclination of ducts or water channels is very steep and steep. 2- The slope and steepness of water channels increase the initial speed and kinetic energy of the sea flow. 3- Increasing the slope and speed of water channels and the initial speed of water flow also increase the sea transfer capacity. 4- Increasing the transfer capacity of the seas causes the movement and transfer of large boulders and even foundation rocks, which along with the destructive capacity of the seas increases and different parts of the earth's surface (where the seas flow) are destroyed, transferred and absorbed.

3.3 Mature Stage:

It covers a relatively large area where the majority of the branching seas are classified as the main surface of the degraded area. At this stage, further deepening of the valleys is reduced. The peaks of the peaks and the water division area of the seas are also destroyed. Lateral or transverse destruction helps to widen the valleys, and the valleys take on a (v) shape. Decreased deepening of valleys due to the low slope and slope of waterways or water canals is the initial velocity flow and transfer capacity of the seas. The above figure shows the natural states of the three stages of the facade and structure of the earth's surface, which is in accordance with Davis' theory.

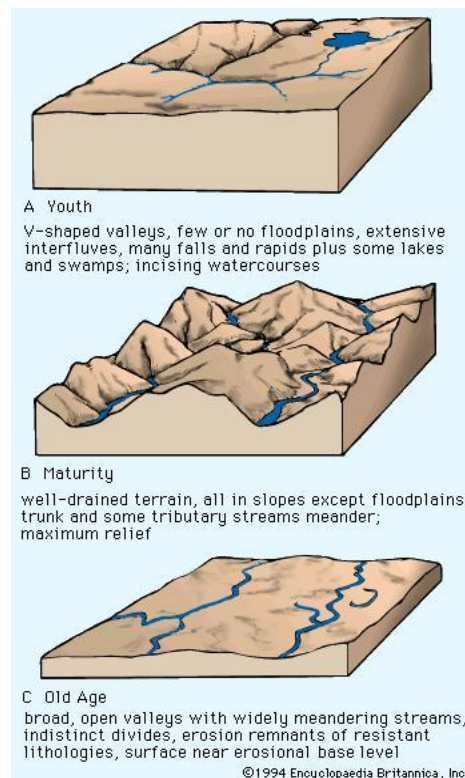
3.4 Old Stage:

This step is generally used to determine the absence of your cuts, but the lateral and side damage and your process will get bigger, which is still active. The watersheds and relatively high areas that direct rainwater to its two sides are rapidly degraded, and in fact the watersheds are reduced both transversely (two-sided) and deep-seated (deepening of the seabed downward). But in many cases, transverse damage is seen at this stage, which depends on the strength of the coastal buildings of the seas. This means that if both sides of the seashore are sedimentary or non-resistant soils, the waters can easily wash them away and increase the width of the seas, and if there are strong rocks or solid layers of soils, then the waters are easily sloping. They cannot destroy themselves (Bloom, A.L:1978).

3.5 Positive aspects of the geographical model of Morris Davis:

1- The geographical model of William Morris Davis is very simple and practical. 2- He has presented his geographical model in a clear, simple and expressive language. 3. Davis has built his model based on his careful and detailed observation of the area. 4. The Davis geographical model was accepted as the general theory of the development and expansion of landforms and

Fig.2. triple stage of Davis theory



structures after a long distance after Hutton's theory of "Cyclic Nature of the Earth's History". 5- This model combines and blends the present geological ideas. In other words, Davis's concept of "Base level" and the Genetic Classification of River Valleys, the concept of "Graded Streams" by G.k. Gilbert combines the concept of equilibrium with the "Profile of Equilibrium" of French engineers.

6- Davis geographical model has the ability to predict, describe and interpret historically, evaluate and measure the views and structures of the earth's crust (Wooldridge, S.W. and R.S Morgan:1960).

3.6 Negative aspects of the geographical model of Morris Davis

1- Davis's approach in relation to the elevation or elevation of parts of the earth's surface views is not accepted by everyone. Because he described the implementation of this action as very fast and its duration is short, while the evidence shows that this action is formed gradually, continuously and for a long time. 2. Davis's solution regarding the relationship between elevation and the demolition process (the demolition process begins after the full elevation is completed) is no more than a big mistake. 3. Davis geographic model seeks long-term stability in the Earth's crust that is not possible in tectonic activity. 4. The German scientist Walther Penck has challenged the emphasis on time or constraints in Davis theory. "Changes in facades and structures on the ground are not parallel to changes in time,". 5. AN. Strahlar, JT. Hack, and RJ. Chorley and others rejected Davis' theory of "Historical Evolution of Landforms." There is no circular or cyclical theory in it, the study is open system. 6. Although Davis had tried to incorporate the nature of the structures, processes, and time into his model, his emphasis was more on time. The interpretation of all his geomorphological processes was based on experimental observations instead of field observations and measurements. 7. Davis has tried to explain the concept of grading "Concept of Grade" as long as it does the ability to work (demolition) and the work that is needed (Singh, Savindra:1998).

According to the example of Morris Davis's article: In the necessary stages of expansion and development of facades and structures on the ground surface (provided that it is a cyclic or period of degradation process), the available energy is more than the energy required to transport sediment. Therefore, the seas use the extra energy available to destroy the valleys, and therefore the destructive nature of the seas are more. As always seen, the valleys are deepened by the flow of the water (Davies, J.L:1980).

3.7 Simple landscapes:

Simple facades and structures are the type of landscapes on the ground that do not have much complexity and are formed by the impact of a single process during a cycle or rotation.

3.8 Compound landscapes:

Composites or complex structures of the earth's surface are views that are formed from the impact of more than one geomorphological and geological process. Most of the facades and structures of today are composite facades and a few of them are simple facades. The most famous of them are: Utah, New Mexico, Arizona, Nevada (Birkeland, P.W:1931).

3.9 Mono Cyclic Landscapes:

Views that do not involve the process of forming more than one cycle or geographical circumference and their physical structure is formed by a destructive cycle. These views are

less well known on the surface of the earth, which usually form after a tectonic action, volcanic cones, the eruption of Earth's lava material, and the earth's interior material that has just risen to the surface.

3.10 Poly Cyclic Landscapes:

They are views that are formed during the completion of several different geological processes and geomorphological destructive cycles in an area.

Such as mountains, valleys, heights, mountain bends, break lines, straits, dams and lakes.

3.11 Exhumed Landscapes:

The facades and structures of the earth's crust, which were previously formed in geological times and based on various factors such as: sediments, extremely strong tectonics, landslides and the action of advancing and retreating glaciers, are located in the lower parts of the crust, for the second time due to Earth's internal force and destructive processes occur on the earth's surface (Agnihotri, S.P:1978).

4.0 Findings:

After doing this study, it was found that:

- 1) William Morris Davis's idea is more accordance to the structures of the surface of the Earth.
- 2) All the land structures are come to exist in the form of "Simple landscapes, Compound landscapes, Mono cyclic landscapes, Multi cyclic landscapes, Exhumed or Resurrected landscapes.
- 3) The base factor for creation of land features of the Earth is "type of structures, Geology and Geomorphological process and time.
- 4) The Internal and External force of the Earth has important role in the form of land features.
- 5) The view of structures is nearly similar in various place of the Earth with theory of MW. Davis.

5.0 Conclusion

Earth as an inhabited planet has different forms of structures, including lowlands, heights, flats, plains and deserts, plains, valleys, mountains, seas, lakes and deserts, each of facades has its own characteristics. All the above structures are made due to different Geological forces and process. The theory which was said by W.M. Davis is nearly accordance with the land structures of the Earth's surface.

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