

Insect bodies and their anatomy are a source of inspiration for interior design concept

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Abstract

Nature is rich in creatures and natural materials and energies and the designer must know how to exploit that gift and benefit from them, and how to develop his designs and innovate new ideas and distinctive, and my research, especially mention of the study of insects and their bodies and how rich in lines and colors and Design relations , which are the work of the great Creator, and my research shed light on these creatures, which no one paid attention to and how to analyze their bodies into geometric lines that are the beginning of new design lines and innovative, and be a fertile source of new design ideas and distinctive.

Key words:

Insects bodies, inspiration for interior , design concept , insect anatomy , engineering analysis .

1. Introduction

Insects do not always have to look at them disgustingly, as many of them have beautiful, bright and beautifully harmonious colors and distinctive, as well as their bodies enjoy unique and smooth lines and when meditating on them you find them a great source of creativity, whether with their lines and body parts or colors and their consistency, and how The designer can take advantage of these creatures that God Almighty created with ultimate precision in the composition of their bodies and how they move.

The problem lies in how to create new innovative interior design units inspired by insect body lines and how to analyze them geometrically and employ these designs in interior spaces.

The research aims to shed light on the insects and their bodies and how they can be the source of a new design thought where it includes the time and lines and wonderful parts of the creation of God the designer must pay attention to.

Nature contains wonderful and special creatures made by God, The designer is in constant search for innovation, Insects are

creatures characterized by colors and composition of beautiful and diverse bodies.

Definition of insects:

They are a vertebrate creatures from a hinged leg with a small size ranging from millimeter to more than 15 centimeters. The planet has been inhabited for millions of years, and is the most diverse and diverse organism among its members. The number of insects described and known in the world is currently more than 820 thousand species. In Iraq, more than 2800 species have been recorded, 844 of which are pests harmful to humans, animals and plants.

2. General Specifications:

They are found in aquatic and terrestrial environments, especially in the tropics.

* Insect body has six legs, mouth parts as well as sensor horns.

* The body is divided into three sections head Thorax chest and abdomen .

- * The head contains compound eyes, simple eyes, a pair of sensor horns, mouth parts. (Figure 1) (Figure 2).
- * The chest consists of three rings, in each neck there is a pair from the bottom and at the top a couple of wings a pair of wings on the second thoracic ring and a pair on the third thoracic ring.
- * The abdomen consists of 11 veneers in the form of monolithic rings.
- * The outer structure is composed of ketin, solid, and the function of protecting the body, be prone to dissociation to allow the insect to grow.
- * The abdomen contains
- * The insect contains a special composition contains a thin membrane that resembles the eardrum in the human helps in hearing is often found on the front leg.

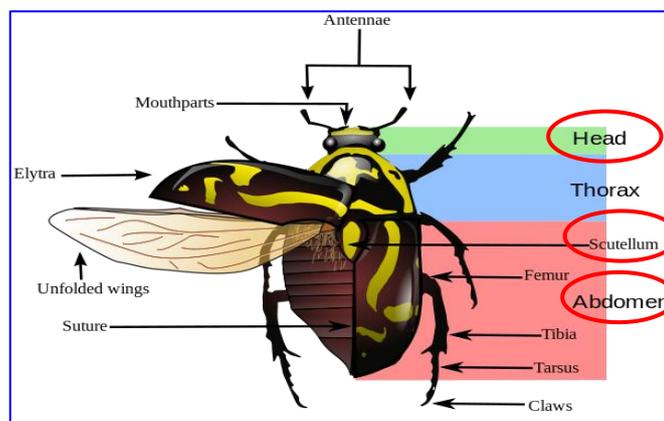


Figure (1) show the three main elements in insects bodies

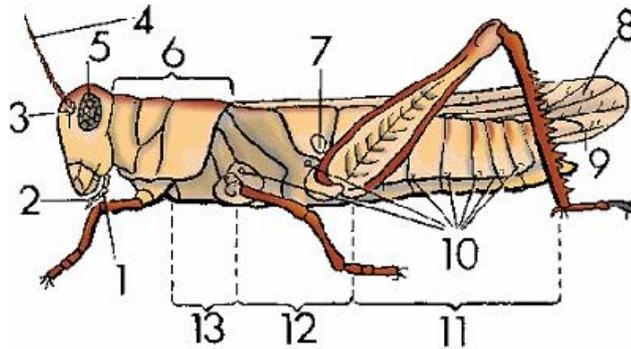


Figure (2) Illustration of insect :
1 labial palps, 2 maxillary palps, 3 simple eye, 4 antenna, 5 compound eye, 6 prothorax,
7 tympanum, 8 wing, 9 ovipositor, 10 spiracles, 11 abdomen, 12 metathorax, 13
mesothorax

3. Different geometric lines with insect bodies:

Insects are characterized by being rich in straight lines and curved geometry. We find insects body lines are also rich in distinctive geometric relations, from which we can draw multiple forms and design units.(Figure 3).

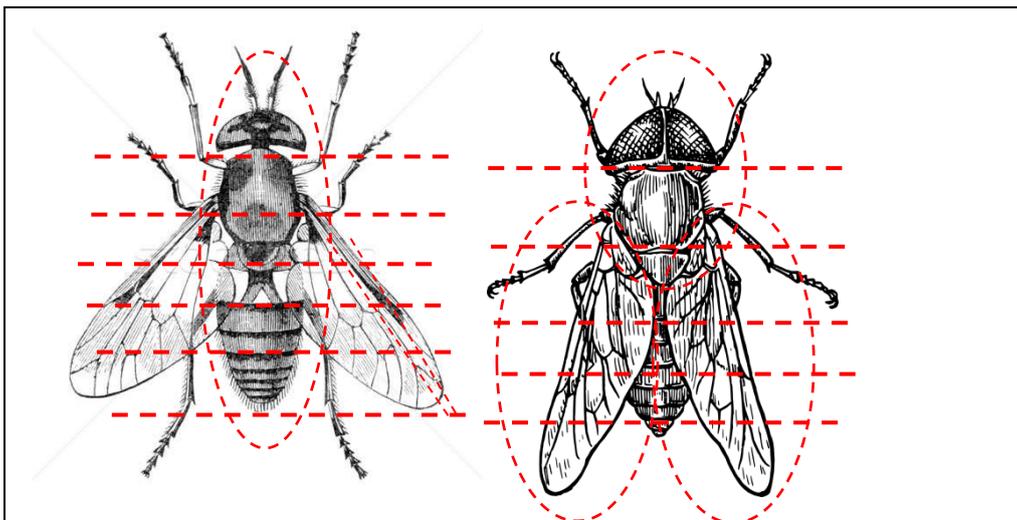


Figure (3) Illustrated different straight and curved geometric lines with insect bodies.

I have done workshop in Arts & design faculty- pharos university Alexandria, student's workshop under my

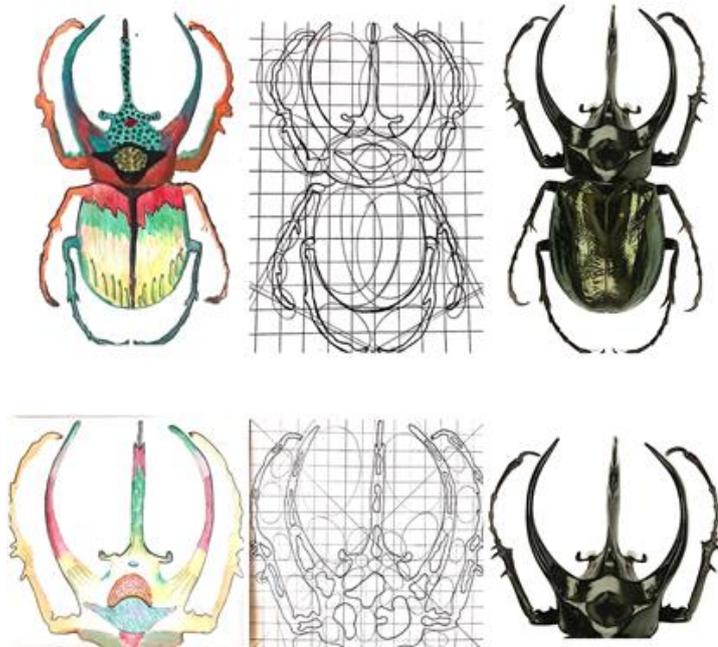


Figure (4) students' work - Arts & design faculty- pharos university Alexandria, student's workshop under my supervision, Geometric analysis of insect bodies on grid cm * cm.

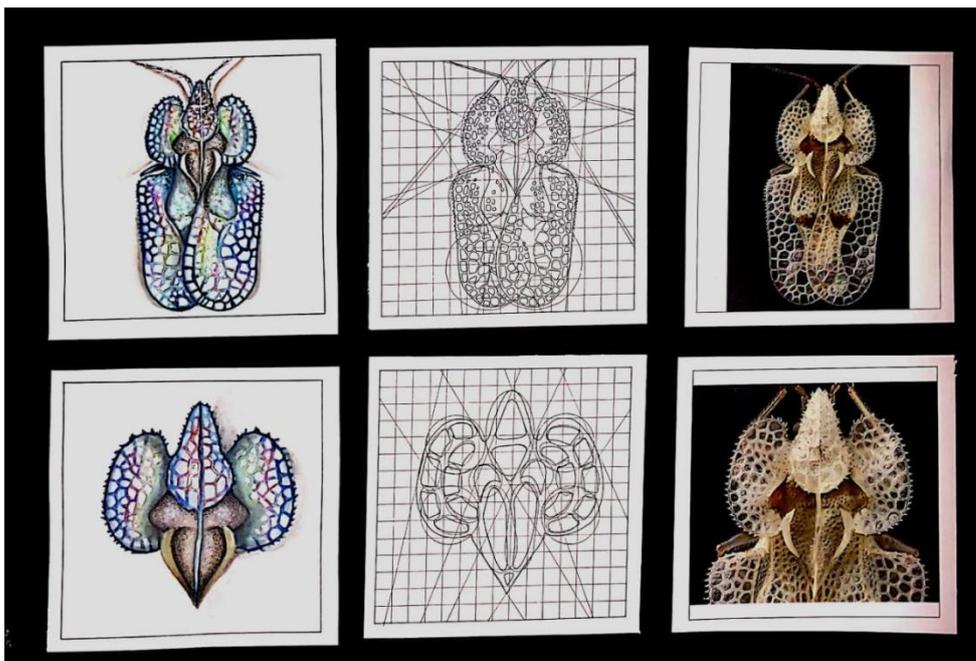


Figure (5) students' work - Arts & design faculty- pharos university Alexandria, student's workshop under my supervision, Analysis of insect bodies to a group of circles and geometric lines.

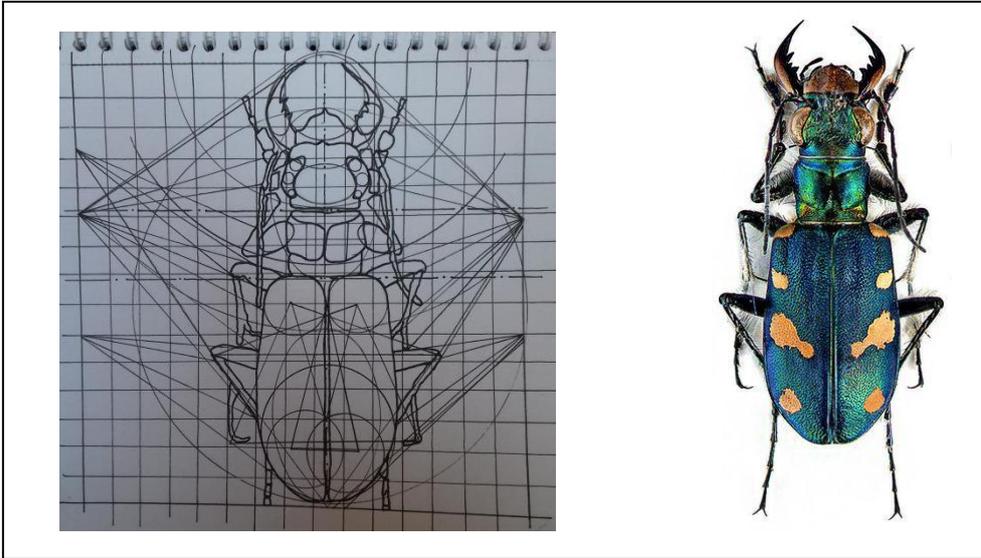


Figure (6) students' work -) Arts & design faculty- pharos university Alexandria, student's workshop under my supervision, Analysis of insect bodies to a group of circles and geometric lines using grid.

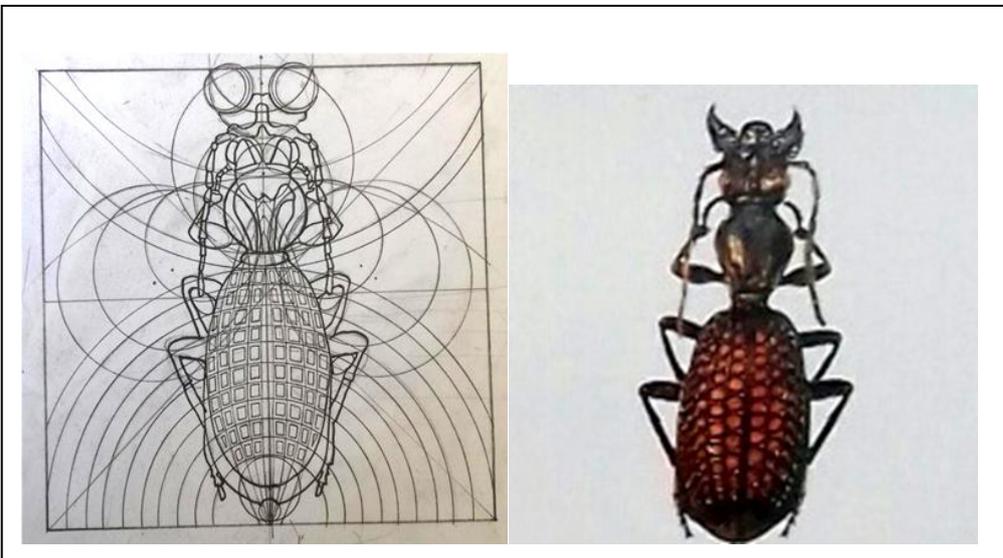


Figure (7) students' work -) Arts & design faculty- pharos university Alexandria, student's workshop under my supervision, Analysis of insect bodies to a group of circles and geometric lines using grid.

After analyzing the body of the insect is engineered part of it is determined and deduced and stripped and the work of three-dimensional formation of these units in several different ways as shown in the following drawings , using the crop part to create a furniture , and creat a small maquette . Also after analyzing the body of the insect is engineered, part of it is determined and deduced and stripped and do design with three-dimensional formation of these units in several different ways, also paint this part with water color manual , as shown in the following drawing figure (8) , figure (9) , figure (10) , figure (11) .

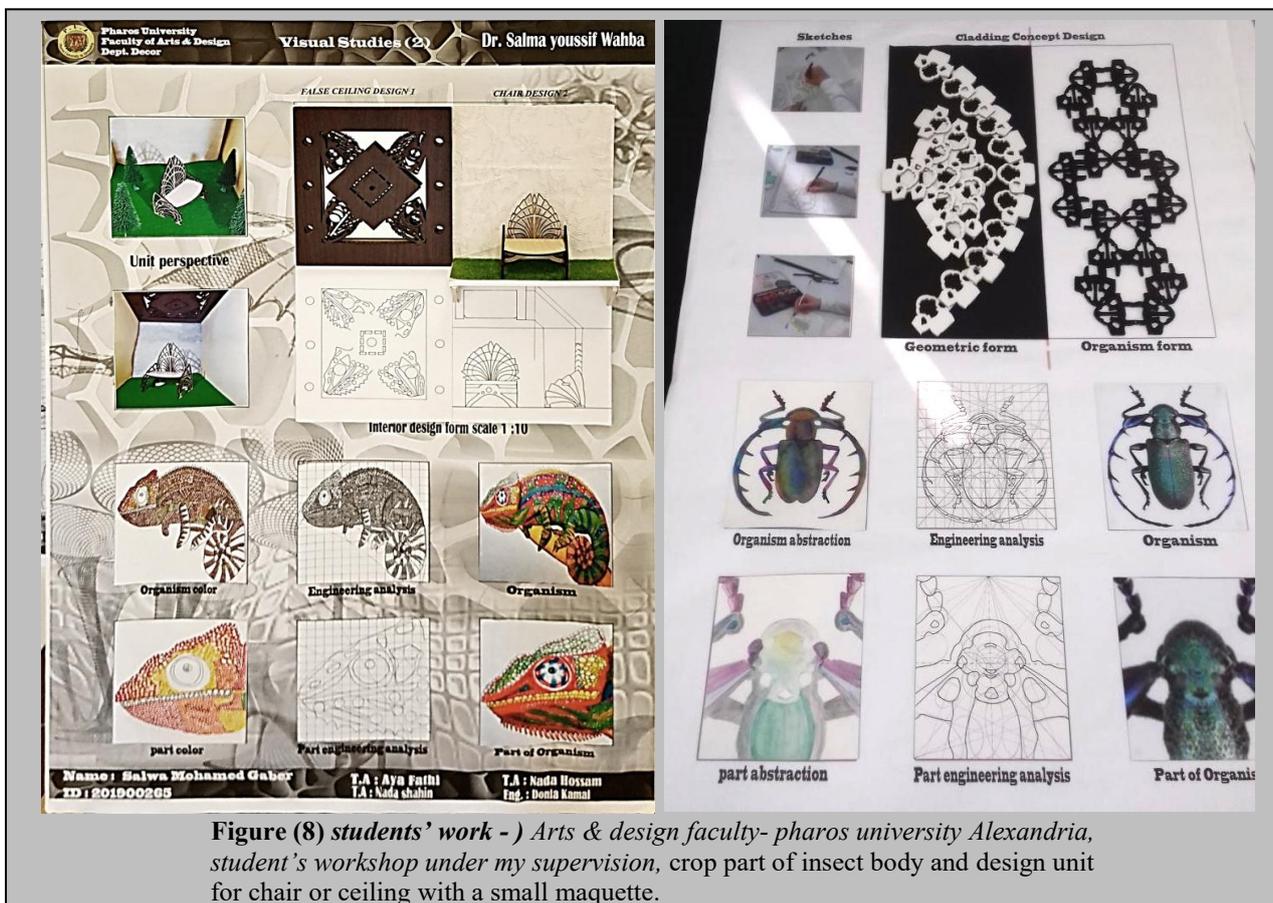


Figure (8) students' work -) Arts & design faculty- pharos university Alexandria, student's workshop under my supervision, crop part of insect body and design unit for chair or ceiling with a small maquette.



Figure (9) students' work -) Arts & design faculty- pharos university Alexandria, student's workshop under my supervision, crop part of insect body and design unit for lighting unit or console with a small maquette.

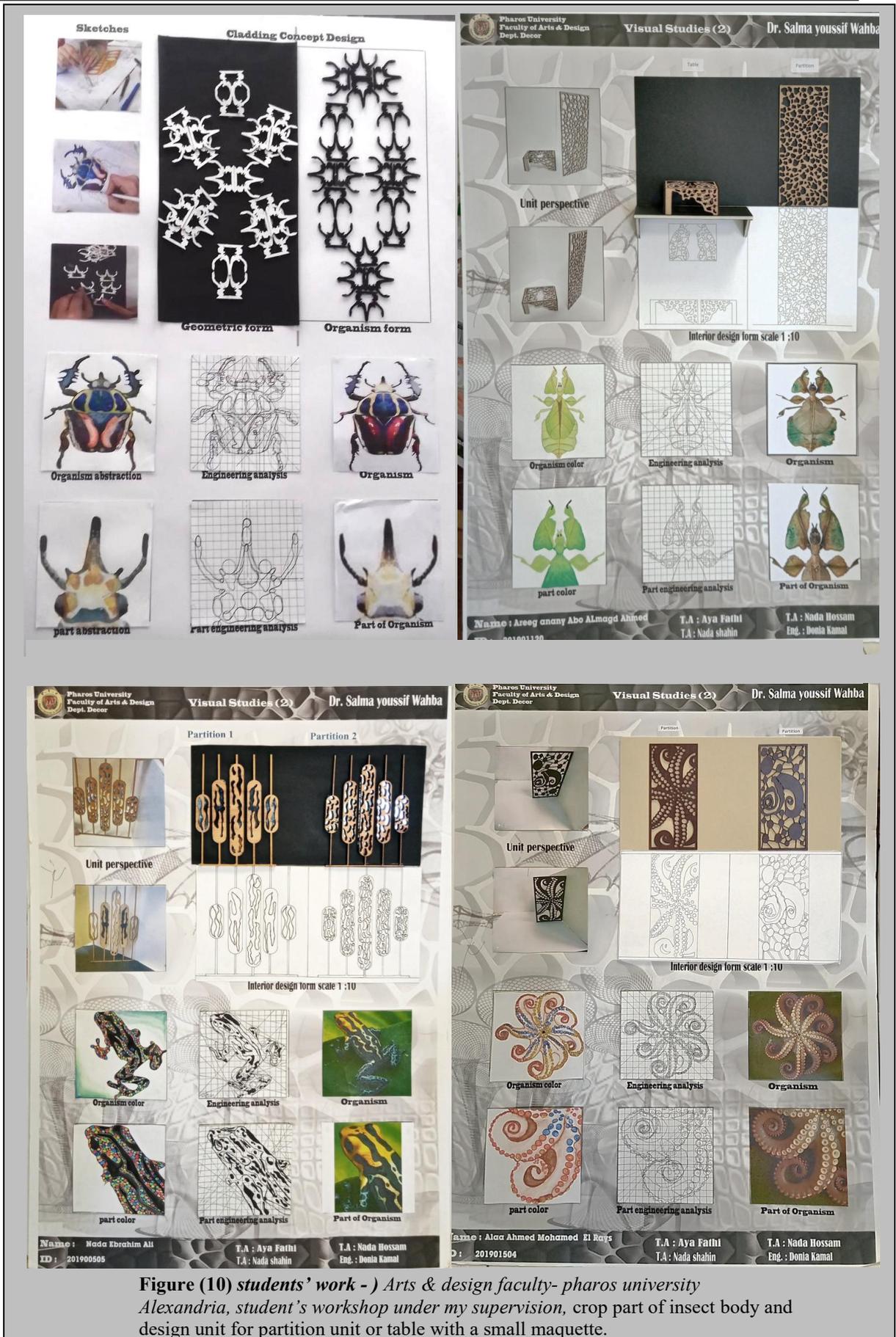


Figure (10) students' work -) Arts & design faculty- pharos university Alexandria, student's workshop under my supervision, crop part of insect body and design unit for partition unit or table with a small maquette.



Figure (11) students' work -) Arts & design faculty- pharos university Alexandria, student's workshop under my supervision, crop part of insect body and use it to create a design for furniture unit with a small maquette.

Insects parts are inspiration for interior architecture design :

By analyzing the parts of insects geometrically we can reach the design of an interior design element derived from the anatomy lines of insect bodies , figure (12) show how I analyzed the insect's wings to design partition with it's lines ,figure (13) show how I analyzed insect's wing to design fall ceiling .

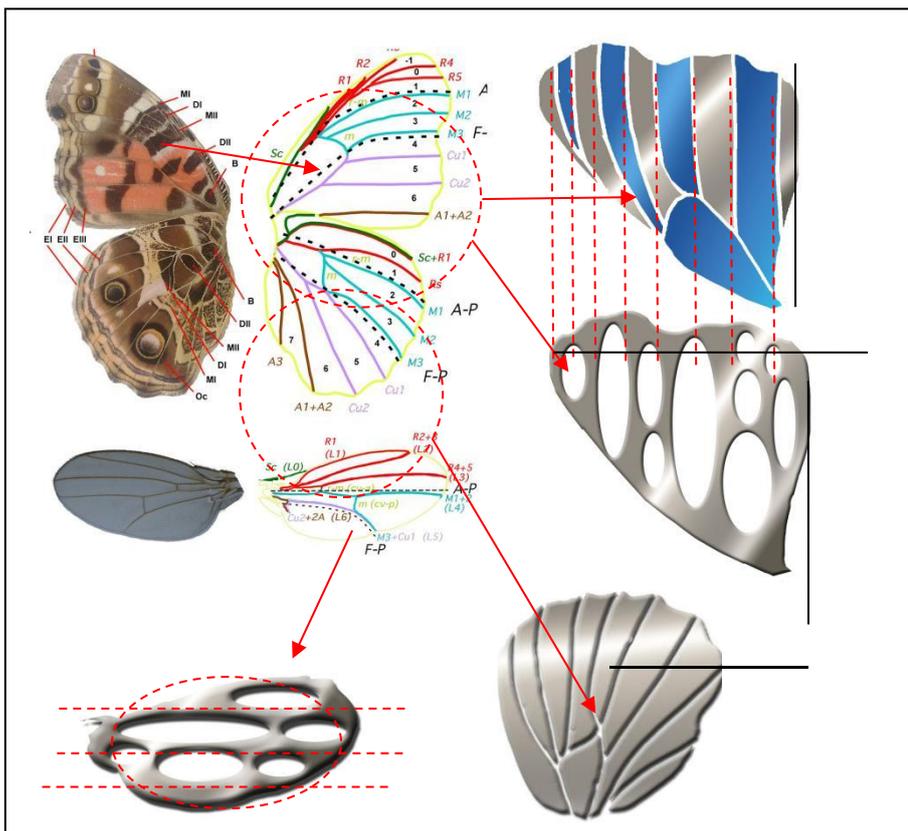


Figure (12) my design for Partition unit design derives its design idea from butterfly wing lines analyzing .

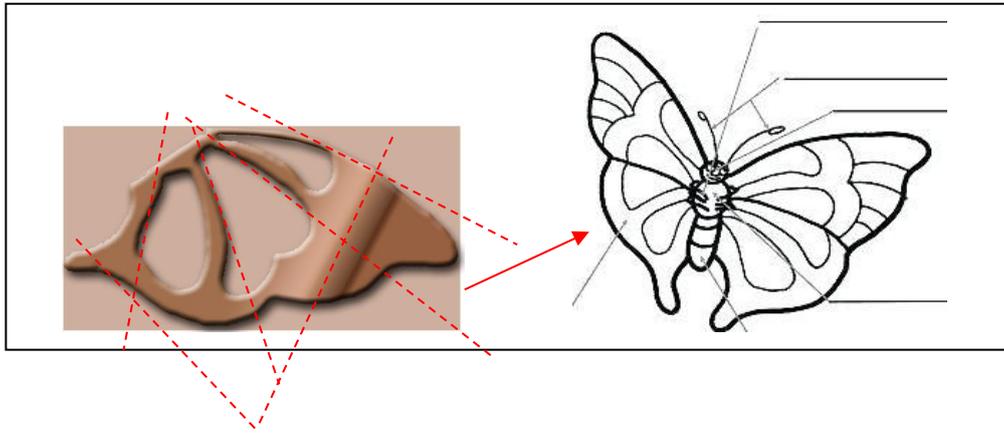


Figure (13) My design for Fall ceiling unit design from butterfly wings analyzing.

figure (14) show the insects' wings lines and how it similar to a grid , figure (15) show the design for two chairs one took the upper part of insect body lines and the another one took the lower of insect body lines , figure (16) can see the different shapes of insects legs .

figure (17) I took the lines from the insect 's leg shape to design a chair can see it in side view as shown in picture , figure (18) I designed a table by taking the lower shape lines from insect's body , figure (19) I took the out lines of the upper part of insect's and design unit light ,

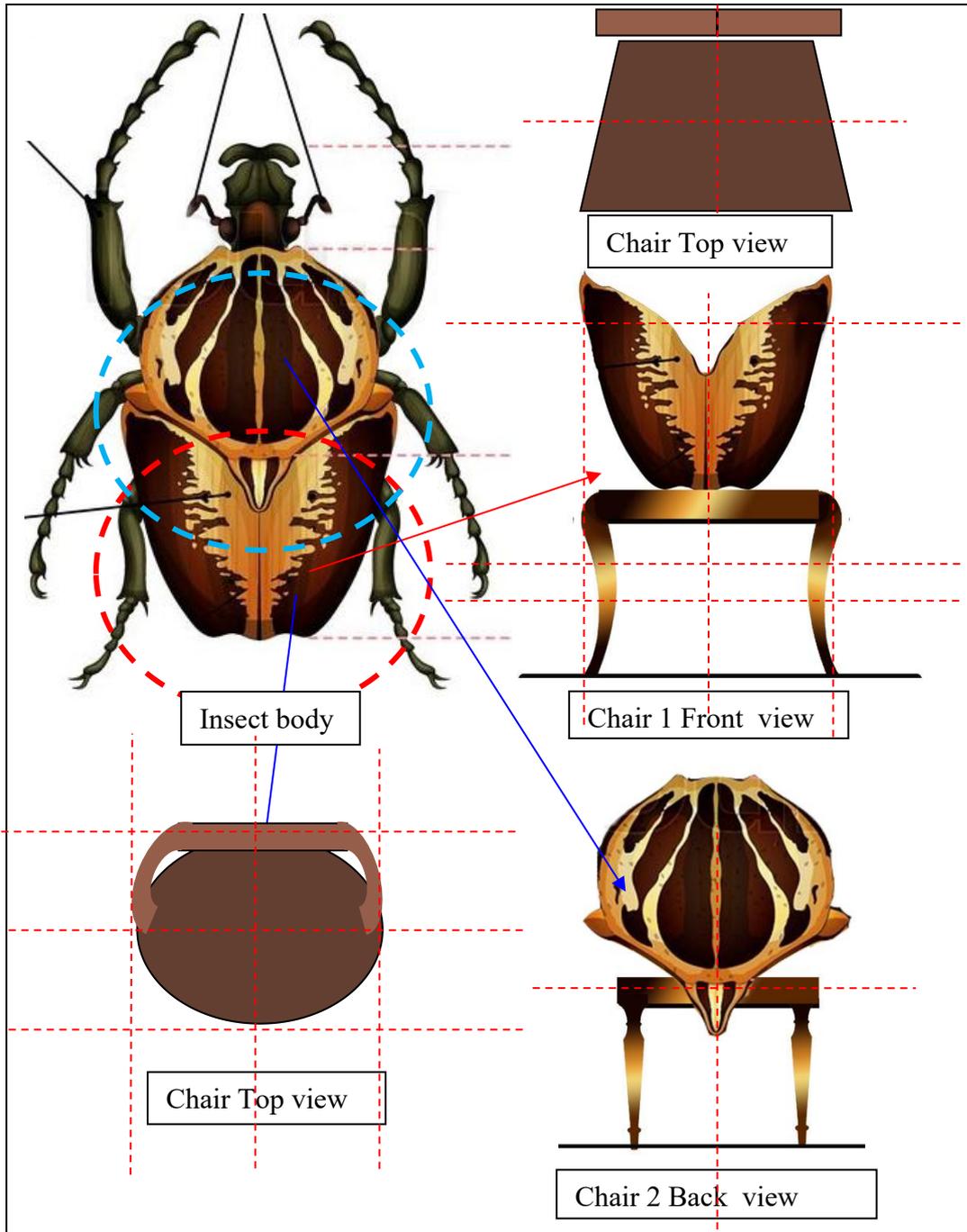


Figure (15) Taking the lower part of the body of the insect, the back of the chair has been designed with the same colors being preserved, where we find it consistent and the design of the chair is shown by the horizontal and facial projection. And the upper part of insects' body use the shape lines and color to design the back of the second chair as shown in back view and plan .

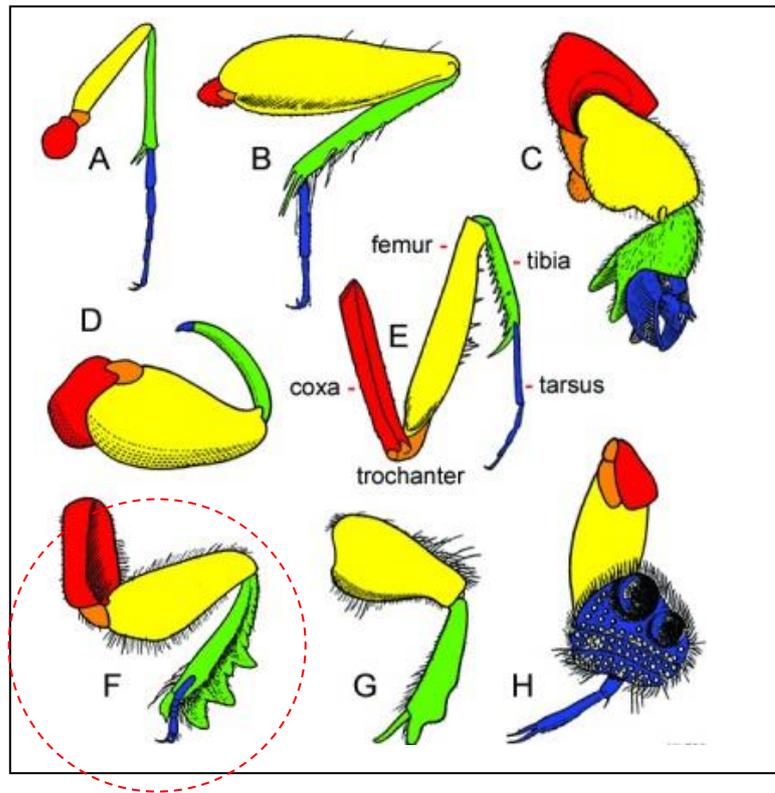


Figure (16) We also notice in the form several forms of insect legs, whose division lines and design of an interior design element can be taken

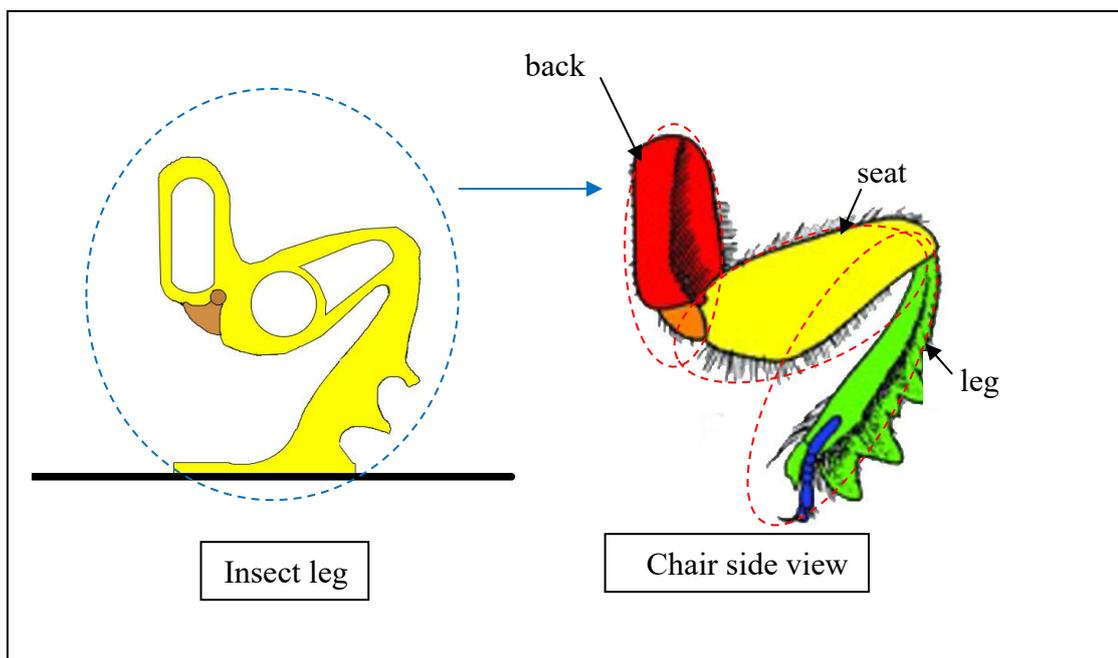


Figure (17) Analyze the insect's lines into a chair design, as shown in the side view shape of the chair.

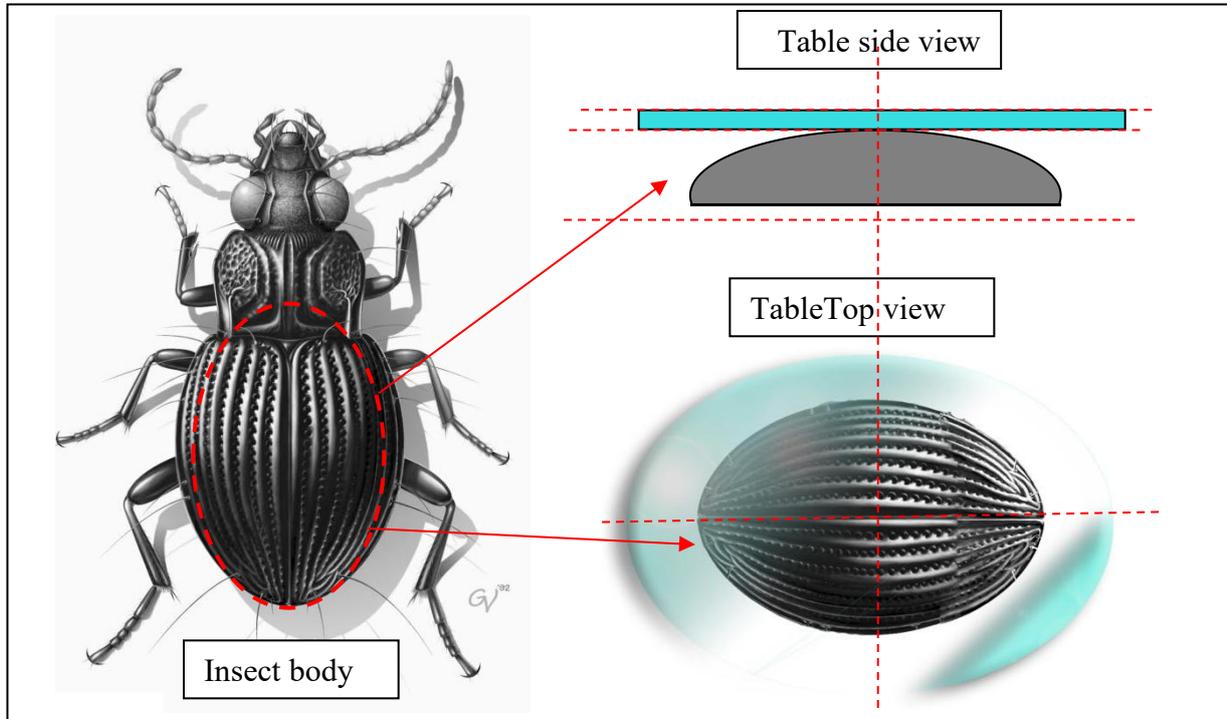


Figure (18) as shown in picture I take the abdomen of insect and design with its shape the lower of table and the upper of table made by glass material to show the pattern in the lower part .

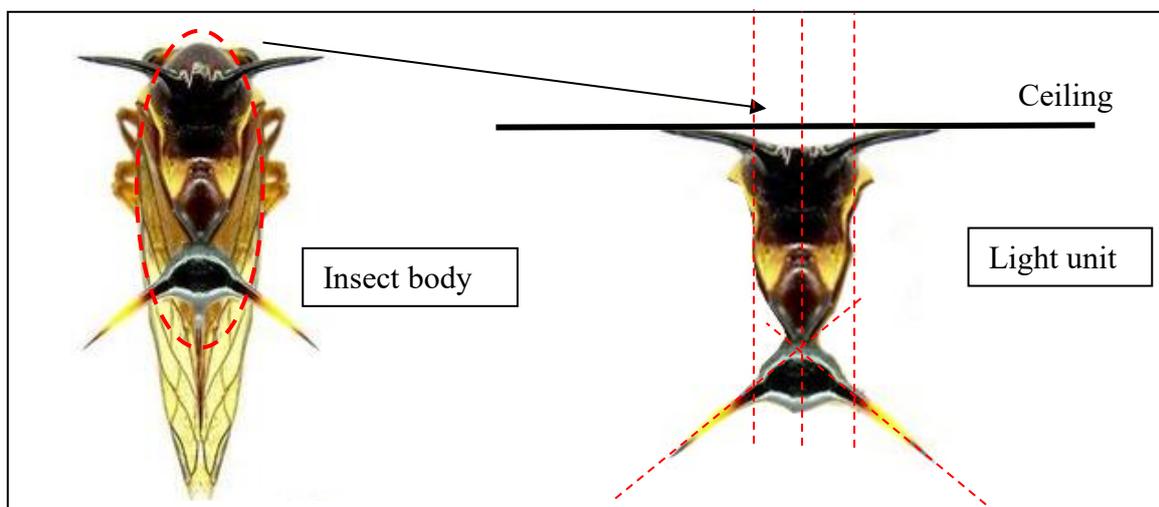


Figure (19) as shown in picture I took part of the insect's body and designed a lighting unit .

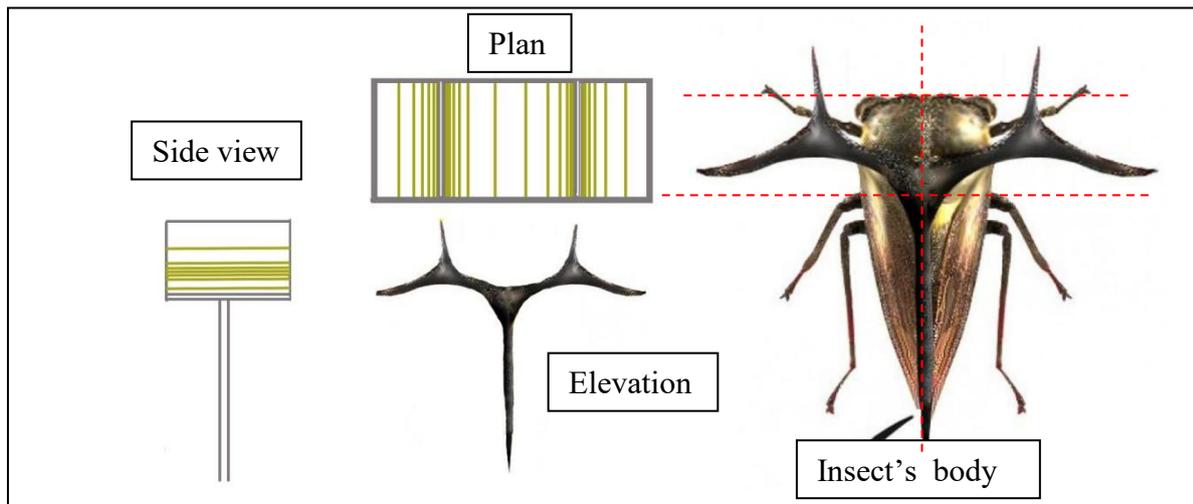


Figure (20) as shown by vertical projections, the horizontal projection has taken part of the insect's body and designed a shading unit.

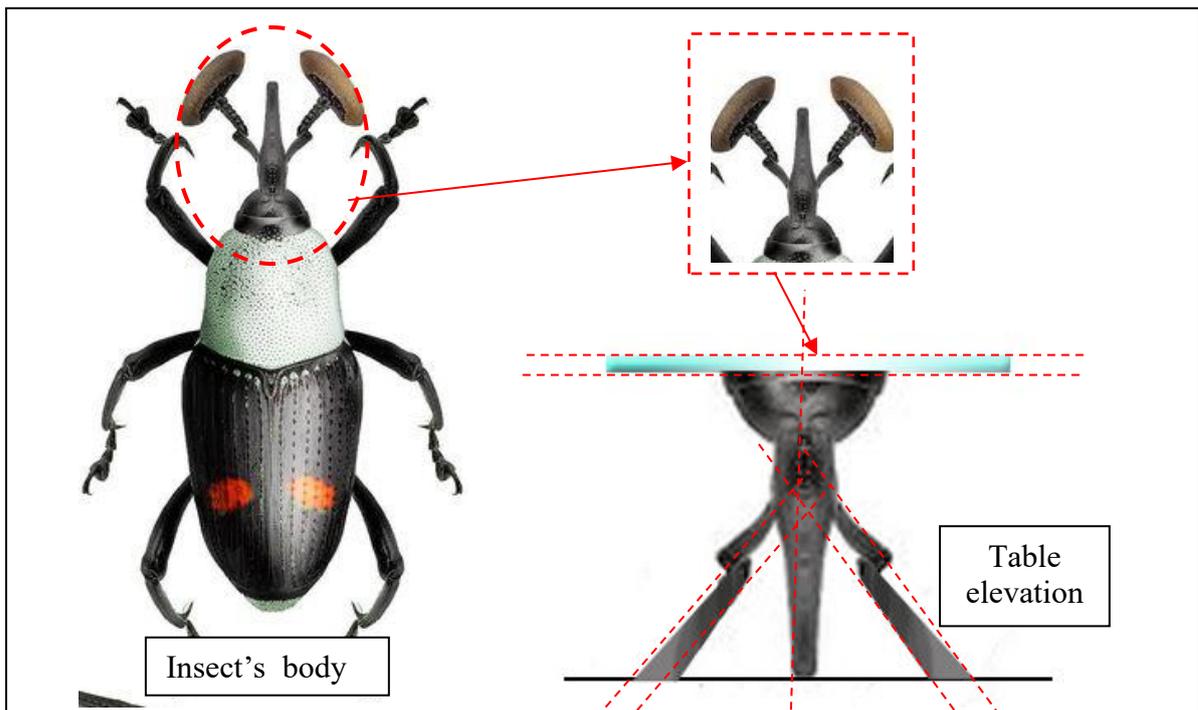
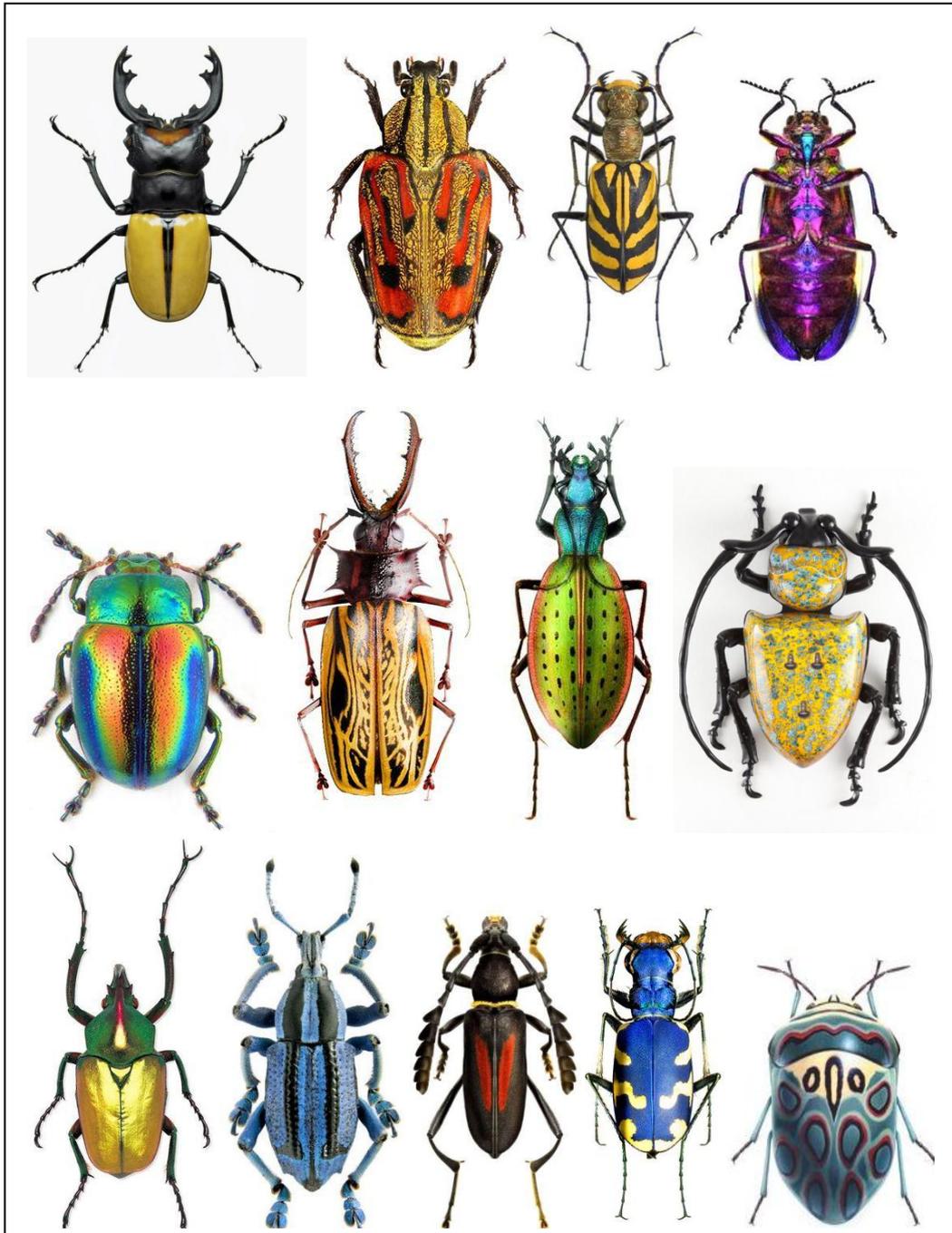


Figure (21) as shown the design of the side table unit is inspired by the top part of the insect body

Figure (22) Insects have a lot of beauty and attractive colors and different patterns which make the designer can use them in different ways his interior projects .



Recommendation

- 1- The designer must constantly research around it to find new and innovative design solutions and ideas.
- 2- The designer must take advantage of nature and what God created and meditate on it.
- 3- The designer does not necessarily have to see the things around him as others see it because he has a different feel for things and other estimates.

References

- 1- (Insect. In *The Merriam-Webster.com Thesaurus*. January 24, 2020), Retrieved from <https://www.merriam-webster.com/thesaurus/insect>
- 2- (Carla Maria Penz, Neda Mohammadi. 2013 , septemper). Wing pattern diversity in Brassolini butterflies (Nymphalidae, Satyrinae). Retrieved from https://www.researchgate.net/publication/258030492_Wing_pattern_diversity_in_Brassolini_butterflies_Nymphalidae_Satyrinae.

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Figure (21)	P15	As shown the design of the side table unit is inspired by the top part of the insect body.
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Finding

- 1- The god created many beautiful and attractive creatures that are a source of inspiration and inspiration to the designer.
- 2- Insects are particularly distinguished for their delicate details, their bodies, and the multiple lines of their anatomy, which motivate the designer to be creative and creative.
- 3- Insects are not sickening creatures, and many sheep have many beautiful colors.
- 4- The designer can create several interior designs, making use of insect lines, insects, colors or body patterns.