EDITORIAL

Growth and Form – Volume 3

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In 2022, *Growth and Form* transitioned to Athena International Publishing. This was an important step to allow the journal to grow in the years to come. The basic idea is still to offer a variety of different perspectives on the natural sciences. The name of the journal comes from one of the most important natural science books of the 20th century, *On Growth and Form* by D'Arcy Wentworth Thompson [1], which combined a wide range of models from applied mathematics and physics with biological phenomena and growth. D'Arcy Thompson's central message is: *"The living and the dead, things animate and inanimate, we dwellers in the world and this world wherein we dwell – πάντα γα μὰν τὰ γιγνωσκόμενα[1] – are bound alike by physical and mathematical law."*

Volume 3 contains two articles. The question of whether there is anything interesting to say about dimensions in physics is answered in the affirmative by Dattoli et al. Dimensional analysis should be the most important asset of a physicist's cultural heritage, both theoretical and experimental. At present, however, it is an undervalued, not to say forgotten, practice. The possibilities offered by this technique are effective, especially for predicting the evolution of a phenomenon based on the parameters and quantities mainly involved in the problem.

The second article offers a new perspective on the rules that equations claiming universality (i.e. involving both living and non-living organisms) should follow. The authors propose nine 'principles' (three for each of three groups) that can be used to evaluate and test any scientifically sound description of a natural form or related phenomenon. These principles are based on the logic of mathematics, especially in the areas of geometry and geometric transformations.

It is true that we have seen a rather slow start, but for 2023 we aim to expand the number of articles significantly. To achieve this, we plan to add more Editors to the board and to collaborate with other sections. The expanded Editorial Board will be announced in early 2023.

Johan Gielis
Editor-in-Chief

REFERENCES

[1]   D'Arcy Wentworth Thompson. On Growth and Form. Cambridge University Press, 1917.

[1]Everything we can ever know