THE ORDER OF ROWERS IN THE ANCIENT SHIPS*

1. The beginning of the problem: from the first literary approach in the XV century to the experiment of Jal in the XIX century.
2. The first scientific approach in the work of Graser and its limits.
3. The great influence of Graser's hypothesis, that caused a few credibility in any model of an ancient ship with fourty orders of rowers, till the discovery of Nemi's ships.
4. The actual studies, based on "scaloccio" system, don't give a satisfactory explanation from a constructive point of view.
5. The idea of "sensile" system as the only way to explain the superposition of rowers in a great ancient ship.
6. The proportions of the ship must remain approximately constant increasing the dimentions and the orders of rowers.
7. A new hypothesis: starting form the possible positions of two rowers, we can build four models of dispositions with a three feet distance from a thoal to another and a fifth model with a greater distance.
8. From the first four models come the three types of "trieres" (without "parodos", with one oar from the "parodos", with two oars).
9. Increasing the third type of "trieres", we obtain the "tetreres", the "penteres" and the "eseres".
10. To build models of a greater number of orders we must apply the fifth disposition.
11. The ships with seven to twelve orders can be deduced thinking to a four feet distance and a disposition of one thwart of three rowers or a double thwart of two rowers each.
12. From thirteen to twenty orders we'll have a five feet distance and thwarts of four rowers or double thwarts of two and three rowers each.
13. Fianlly, the ship with thirty orders must have a six feet distance and double thwarts of five rowers each and the ship with fourty orders the same disposition with a seven feet distance.
14. The "tessarakontores" is the only ancient ship whose measures have been described in a text of the antiquity in our possession. Starting from these measures and applying the theoretical models, we may have a sure base to approach the real aspect of ancient ships.
15. The rules for building the ancient ships are simple and constant. like the harmony of Greek temples.

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* This is an abstract of Dr. Ascani oral communication.