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THE INTEGRATION ROLE OF RELATED DATA BASE AND
EXPERT SYSTEMS AS TOOLS FOR SUCCESSIVE
APPROXIMATIONS

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Ecology has been initially defined as a global science on relations of organisms with their milieu (...gesammte Wissenschaft von den Beziehungen des Organismus zur umgebenden Aussenwelt,...) by E. Haeckel (1866). This science was just impossible because all science objective progresses were made on an increasing power to accumulate analytical facts. Today, a huge amount of data is available on organisms in their milieu (climate, soil, water, ...) from various sciences contributing to "ecology" and environmental studies. The problem lies in data handling and real synthesis. Now, Artificial Intelligence and computer facilities give us potential tools to both handle data and improve synthesis. So, today, we have both data and tools, but the practical improvement of ecology as a global science needs an additional thing : a sound conceptual approach.

This sound conceptual approach is not obvious mostly because ecology compensated the absence of convenient tools during more a century by various "cosmetics", i.e. to confuse ecosystem with biocenoses, information on systems with information in system, integration with juxtaposition, synthesis with compilation, and so on.

Jointly, a reassessment of concepts has been made, with their test in Related Data Base and Knowledge Base in one Expert System. Surprisingly, this work leads to a very restricted number (about one hundred) of really needed concepts and words proper to ecology. The strategy to increase knowledge both by addition of facts (data) and iterative fitting of interpretations is also clearly understandable and simple. Examples of these concepts and ways to increase knowledge are given.