On rings stable under derivations

Abstract:

Let $z$ be an algebraic function of $n$ variables and $A(z)$ the algebra generated by all variables and all partial derivatives of $z$ (of all orders). If $z$ is a polynomial then $A(z)$ is just a polynomial algebra, but when $z$ is not a polynomial then it is not clear what is the structure of this algebra. I’ll report on known cases and formulate a conjecture.