I. INTRODUCTION

The ontology of scientific theories is rich in entities other than physical ones. Where the theory is mathematical, there will be quantification over numbers as well as over physical objects. In the light of this, some philosophers, notably Quine (1953, 1969), have been forced to admit that nominalism is too austere an ontological doctrine to do justice to science. But such thinkers, attracted by the parsimoniousness of nominalism, have gone on to assert that the concessions begin and end with numbers: an attenuated nominalism, which countenances only physical objects and numbers, is a sufficient metaphysics of science.

The ontology of mathematics, beginning with the integers, Quine takes to be reducible to the ontology of set theory. So his attenuated nominalism includes just existing physical objects and the sets, sets of sets, and so on thereby constructible. Properties, however, fall beyond the pale, since they cannot be identified with either physical objects or sets. A property can't be identified with the physical objects exemplifying it, if one thinks that there are properties which lack exemplars. And a property can't be identified with the set of things possessing it, if one thinks that two different properties may be possessed by exactly the same objects.

Thus, the thesis that properties exist represents an additional, and apparently irreducible, ontological commitment beyond that envisioned by attenuated nominalism. Quine has developed two reasons for thinking that our ontology should not be augmented so as to include this ontological category. His first point is that the criterion for individuating properties is unclear. We know that two sets are the same if they have the same members; but what are the conditions under which two properties are the same? Quine's second point is
that postulating the existence of properties would not explain anything. If we know that the barn is red, for example, how would the added assertion that the property of redness exists explain anything which we could not already explain? In what follows I critically examine these two themes, which I will call the clarity argument and the parsimony argument. Although I will suggest that these two arguments are defective, I also will try to show that certain related arguments on behalf of the existence of properties are likewise flawed. This will set the stage for the discussion in the fourth section of the perspective provided by evolutionary theory on the question of the ontological status of properties. It will emerge that evolutionary theory provides reason for thinking that properties exist, and, additionally, gives an interesting point of view on the epistemological and metaphysical issues that Quine has addressed.

II. THE CLARITY ARGUMENT

Two sets are the same if and only if they have the same members. But it is necessary, but not sufficient, for two properties to be the same that they be exemplified by the same objects. To explain why two coexemplified properties can be different, we need to appeal to modal concepts — to necessity and possibility. If it is merely accidental that $P$ and $Q$ are exemplified by the same objects, then $P$ and $Q$ are different properties. So the criterion for individuating properties, unlike that for individuating sets, appears to require a concept of necessity, and thereby inherits all of the difficulties which Quine has catalogued for modal notions.¹

Since Quine's views on modality are central to his criticism of ontological commitment to properties, it is necessary to be somewhat precise about the character of his criticisms. He does not make a blanket condemnation of modal concepts. For example, the use of dispositional notions like that of water-solubility is good science; but as science progresses, such dispositional concepts will be replaced with notions defined in terms of physical structure which Quine regards as nonmodal in character. So it appears that Quine's position is that he thinks that irreducibly modal properties have no place in science.

But let's consider the question of whether water-solubility and physical structure $X$ are different in this way. If they are one and the same property, it would appear to be mistaken to say that one, but not the other, is a 'modal'