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this issue.

A CORRESPONDENCE THEOREM FOR PROJECTIVE 
MODULES AND THE STRUCTURE OF 
SIMPLE NOETHERIAN RINGS

BY CARL FAITH

Communicated by Hyman Bass, October 12, 1970

One of the tasks confronting ring theorists is the classification 
problem for simple noetherian rings. The Goldie theorems [1958], 
[1960] and the Lesieur-Croisot theorems [1959], provided the first 
structure theory for the non-artinian ones; and more generally, 
semiprime noetherian rings. The author [1964] showed that every 
simple right noetherian ring is isomorphic to the endomorphism ring 
of a torsionfree module of finite rank $U$ over a right Ore domain $B$, 
and Hart [1967] showed that $U$ could be chosen to be finitely gen-

AMS 1970 subject classifications. Primary 16A46; Secondary 16A50.

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module, global dimension, biendomorphism ring, noetherian simple rings, trace ideal, 
rings with at most three ideals, idempotent right ideals, rational extension, maximal 
right quotient ring, Ore domains, integral domains, faithful modules, annihilator right 
ideals, right annulets, torsion-free.

$^1$ Submitted January 15, 1970 under the title, On Noetherian simple rings, and 
April 20, 1970 under the present title; this paper was presented at the Conference in 
Associative Algebras sponsored by the Istituto Nazionale di Alta Matematica, Città 
Universitaria, Roma, November 23–26, 1970. Full details, generalizations, and ex­
tensions of this research announcement will appear in the Proceedings of the Con­
ference, and also in Chapter 4 of the author’s forthcoming book to appear in 1972.

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part, by a grant from the National Science Foundation.

$^3$ More generally, any simple ring with a uniform right ideal.

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