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AN ECONOMIC GEOGRAPHY OF CONSUMER MOVEMENT
AND EXPENDITURE PATTERNS IN COUNTY DURHAM.

DIAGRAMS:

To accompany a Thesis submitted for the
degree of Doctor of Philosophy, in the
University of Durham.

CHRISTOPHER N. JENSEN - BUTLER. B.A.

December 1970.

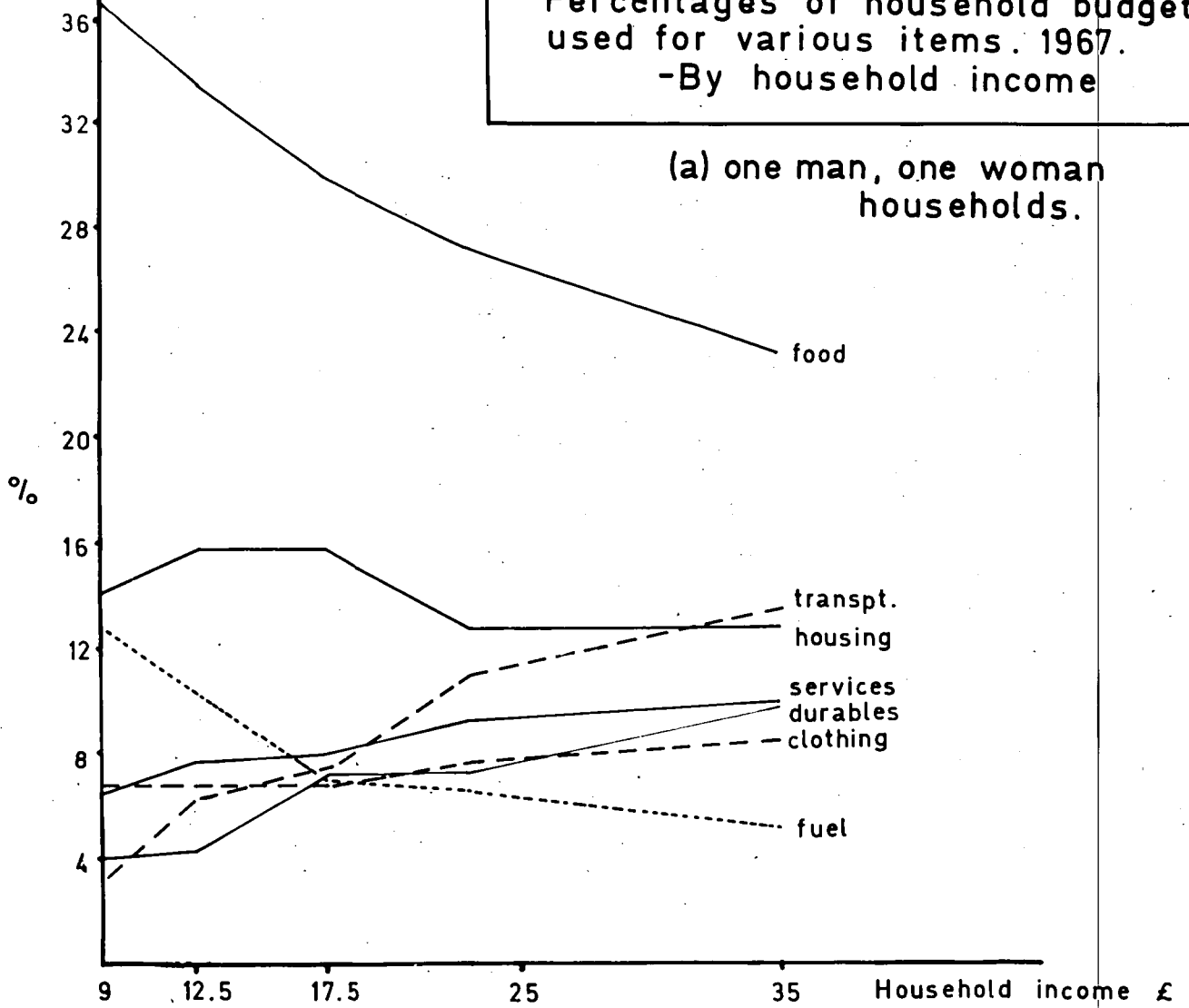
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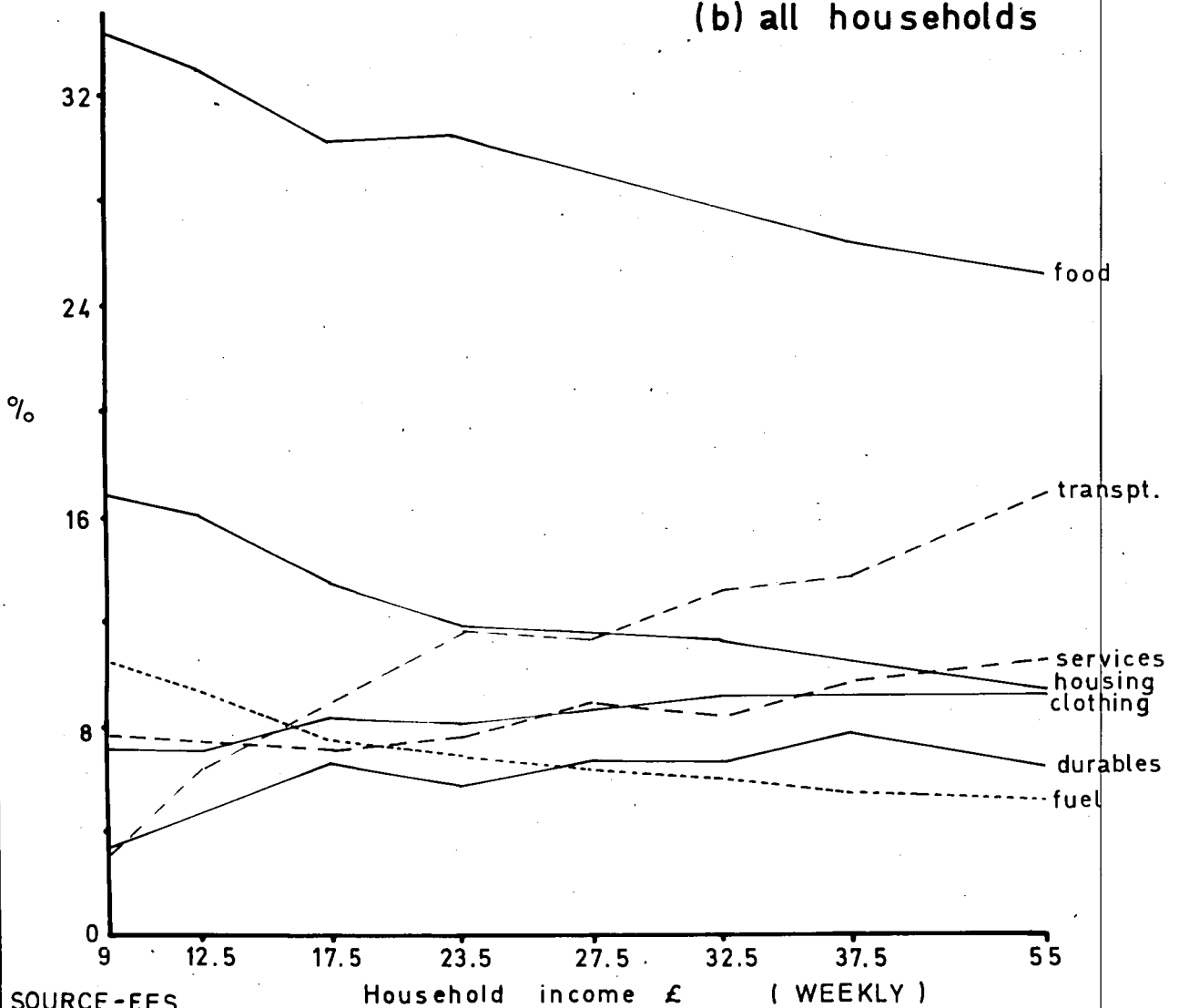
16. JUL. 1984

Percentages of household budgets used for various items. 1967.
-By household income

(a) one man, one woman households.

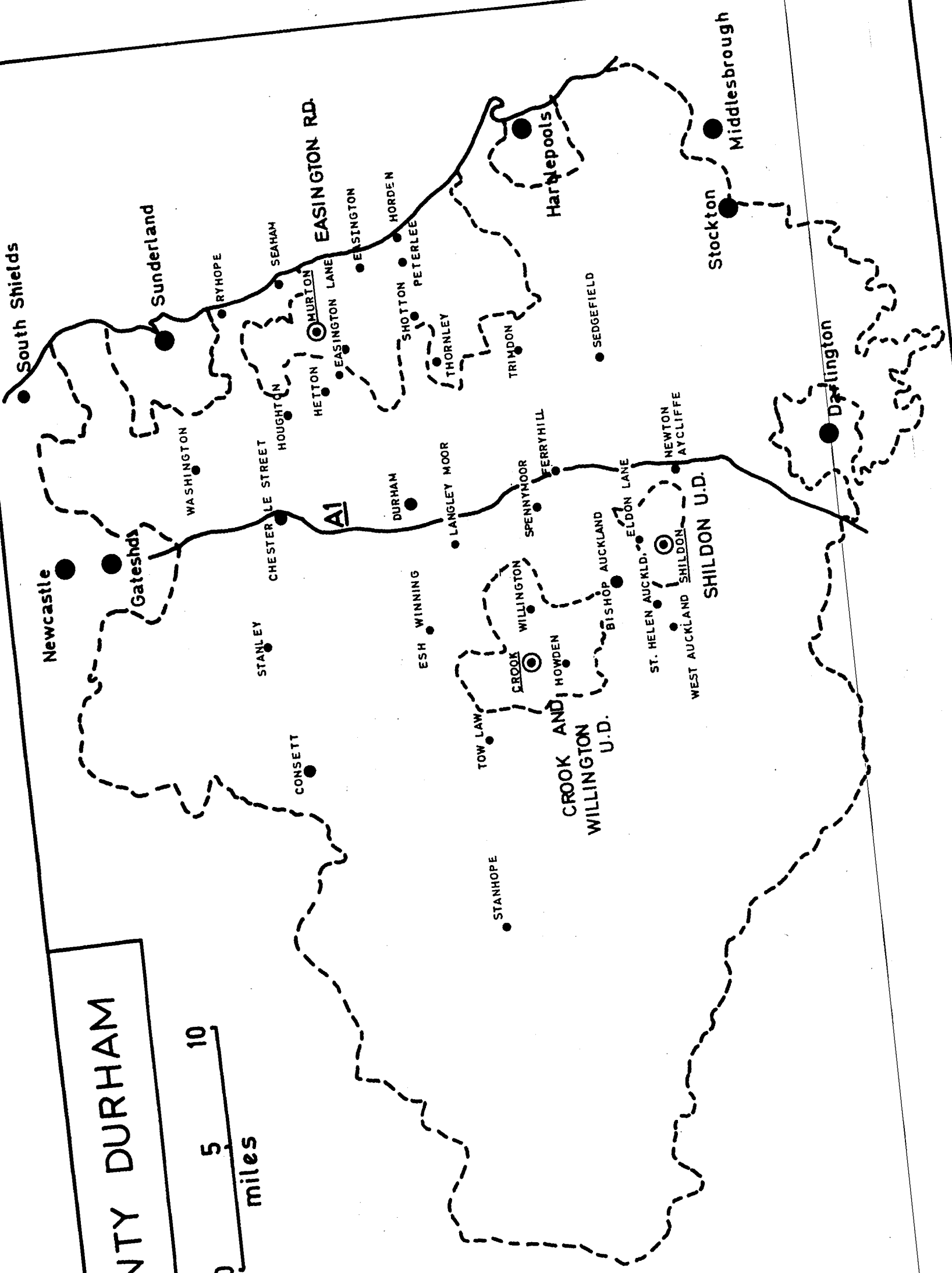


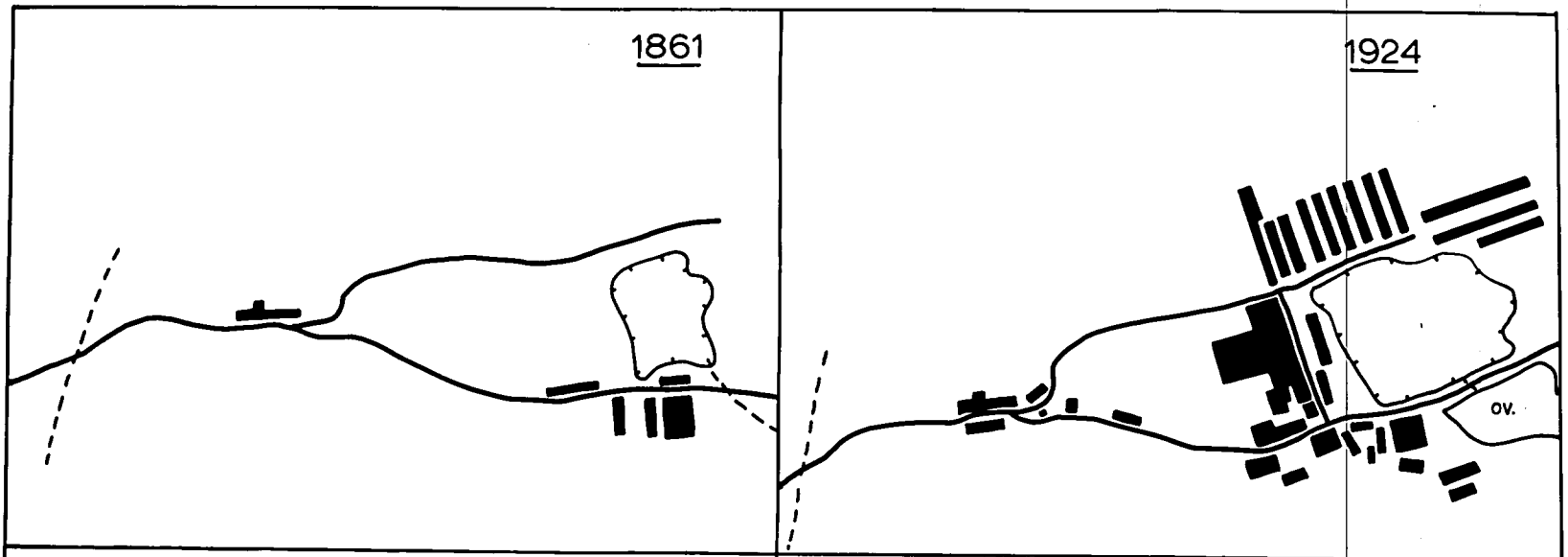
(b) all households



SOURCE - F.E.S.

COUNTY DURHAM











1861




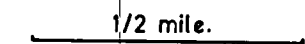
1924

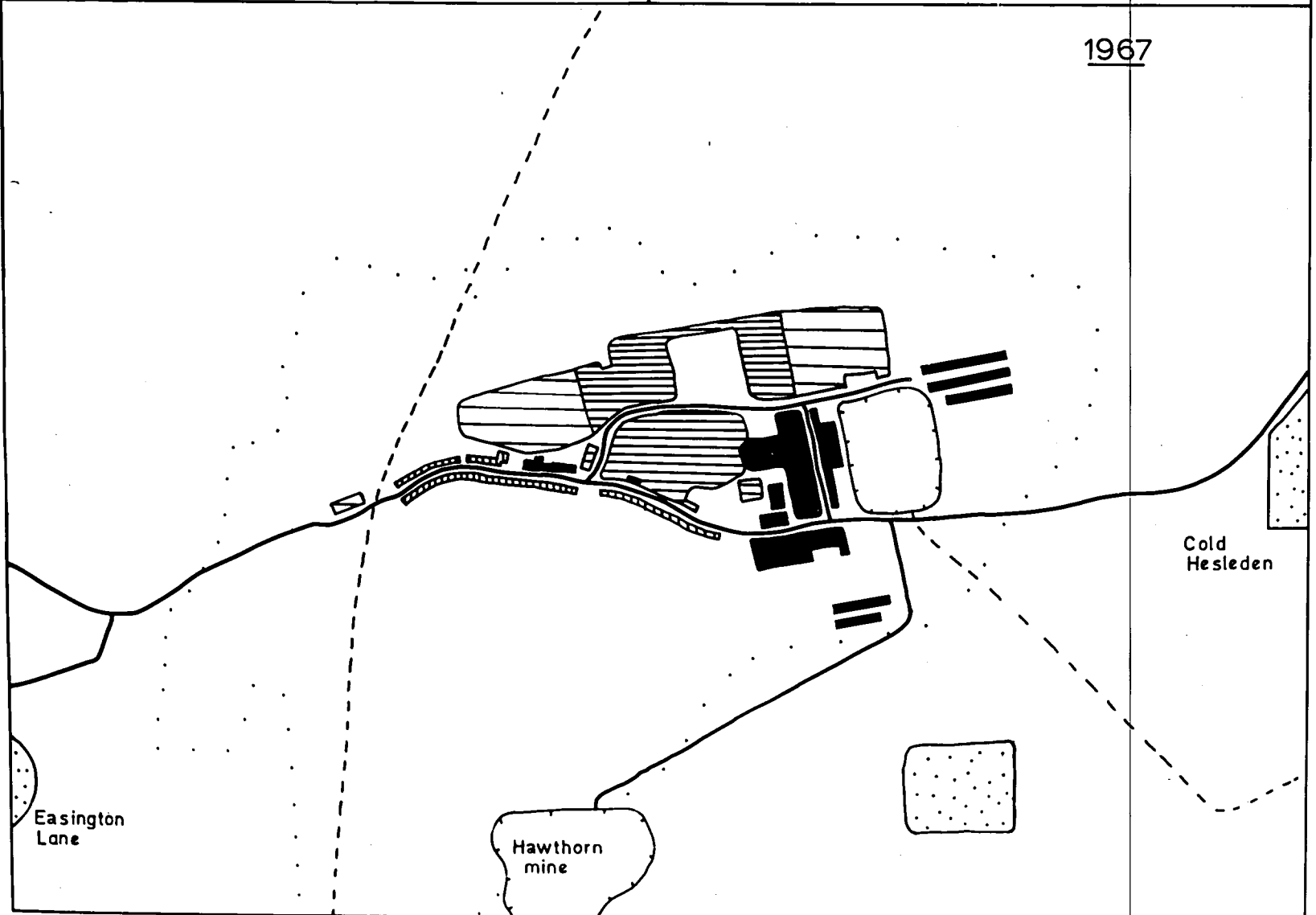
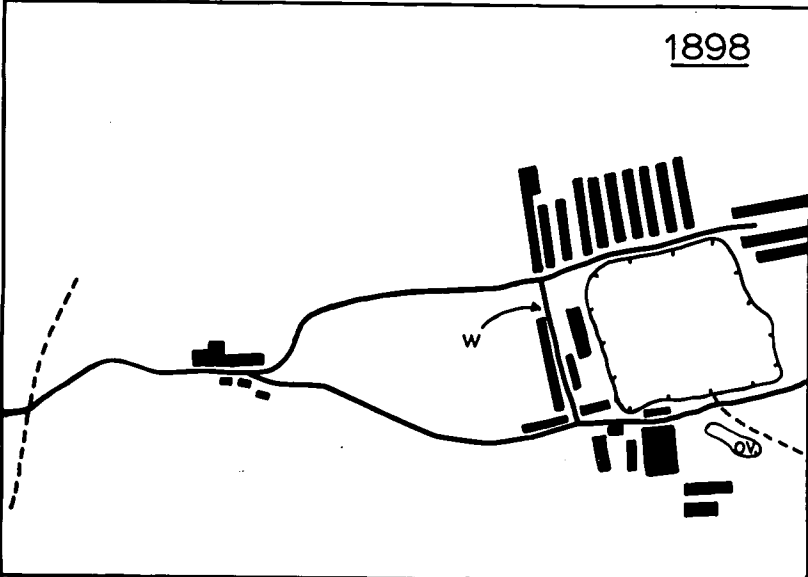
1898

MURTON: MORPHOLOGY.

housing : 1967 only

-  predominantly pre 1900
-  pred. 1900-39 council
-  pred. 1900-39 private.
-  pred. post 1945 council
-  pred. post 1945 private
-  other settlements

-  ward boundary
-  railway
-  pit area
- ov. : ovens
- w : Wood's Terrace
-  1/2 mile.



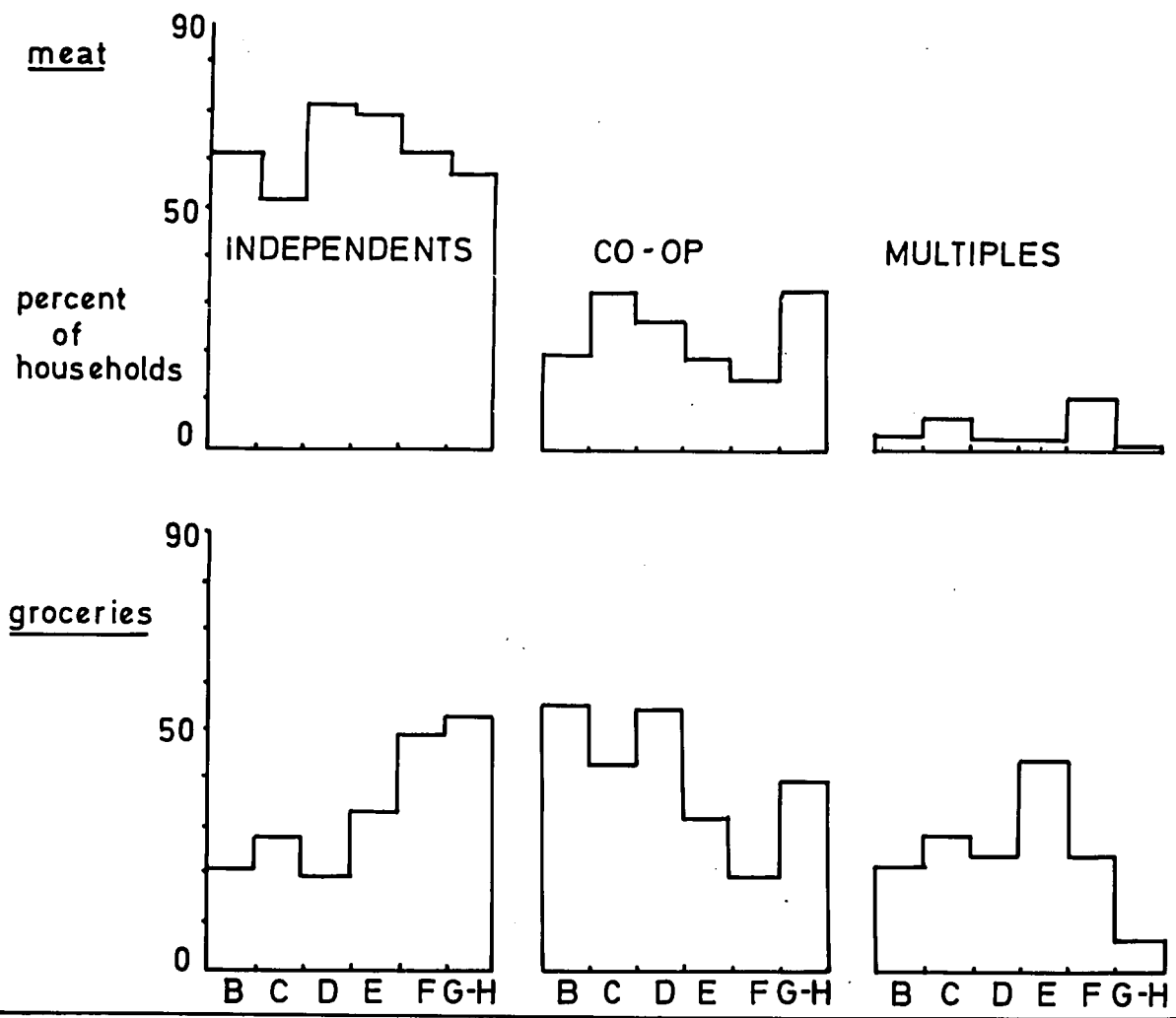
1967

Easington Lane

Hawthorn mine

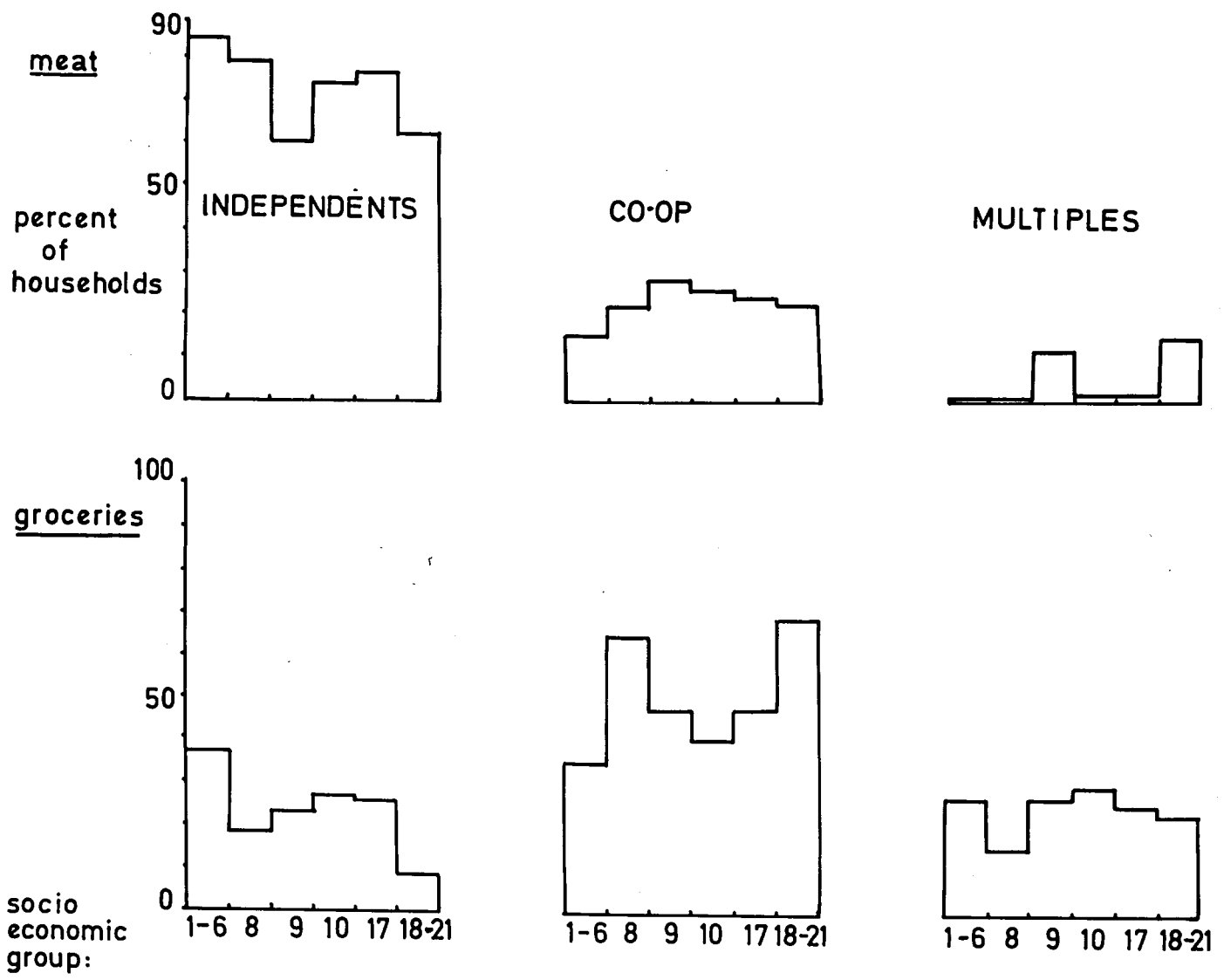
Cold Hesleden

INCOME GROUP AND HOUSEHOLD PURCHASE PATTERNS: MURTON.



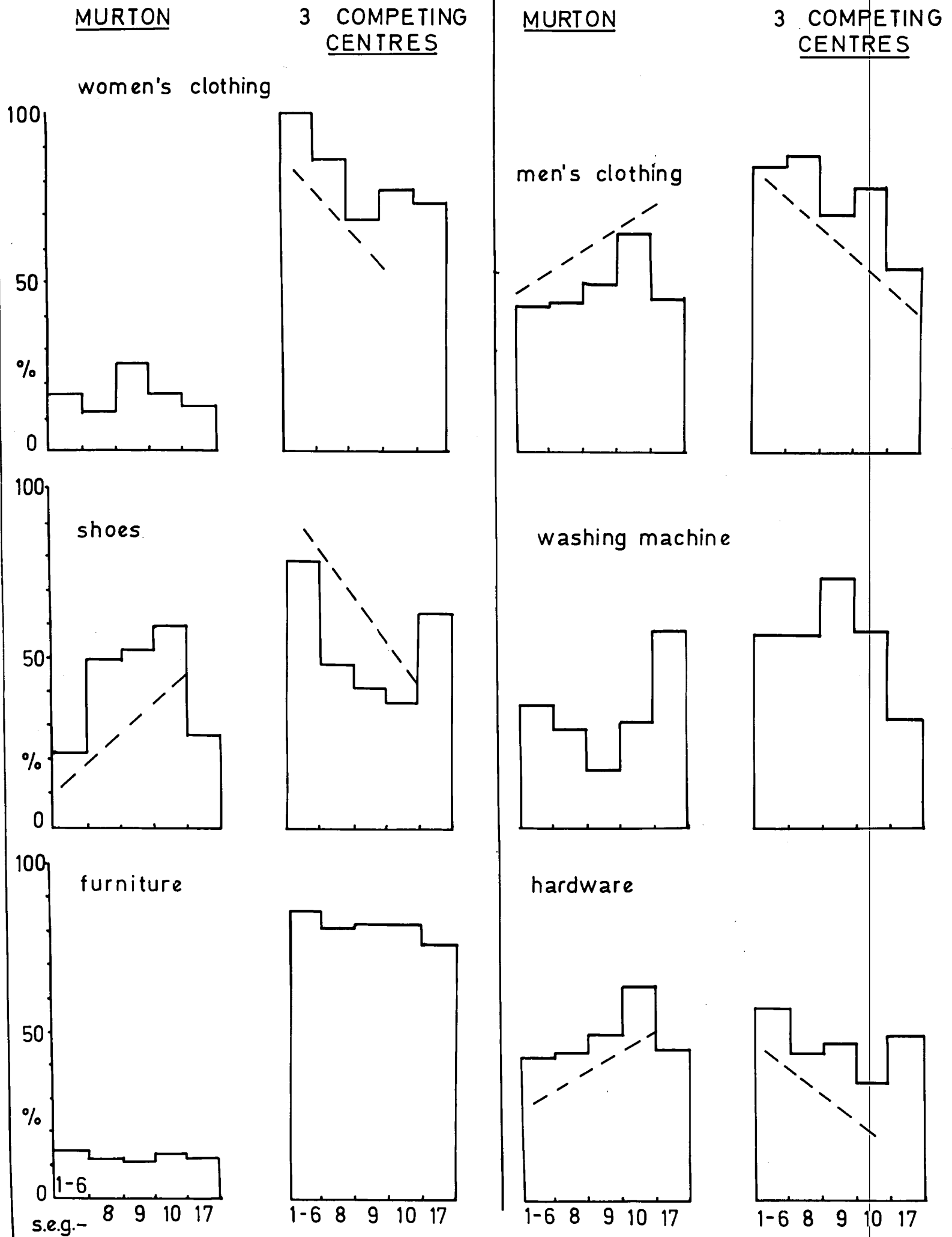
(b)

SOCIO-ECONOMIC GROUP AND HOUSEHOLD PURCHASE PATTERNS: MURTON.

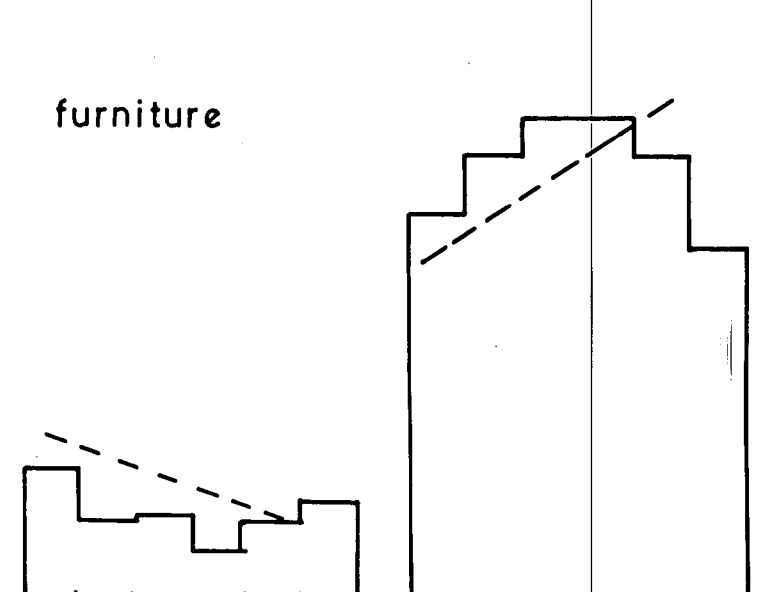
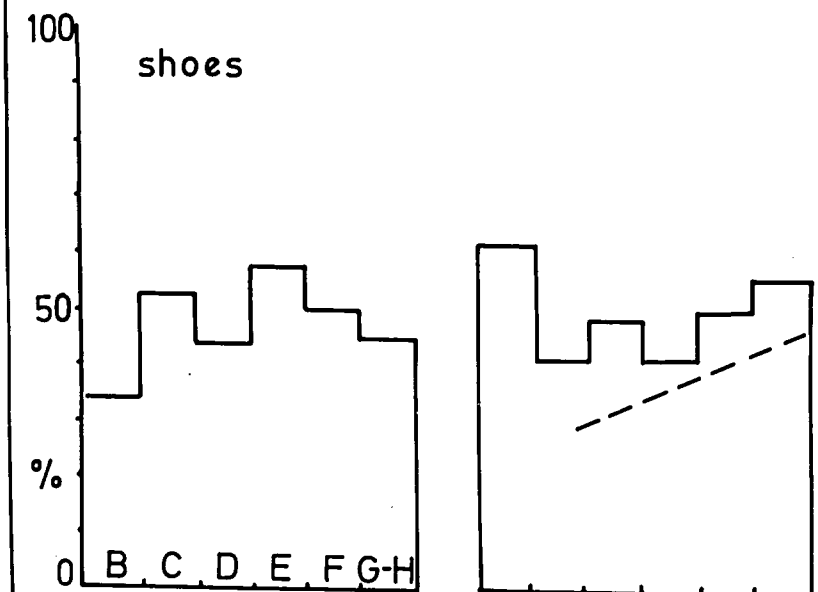
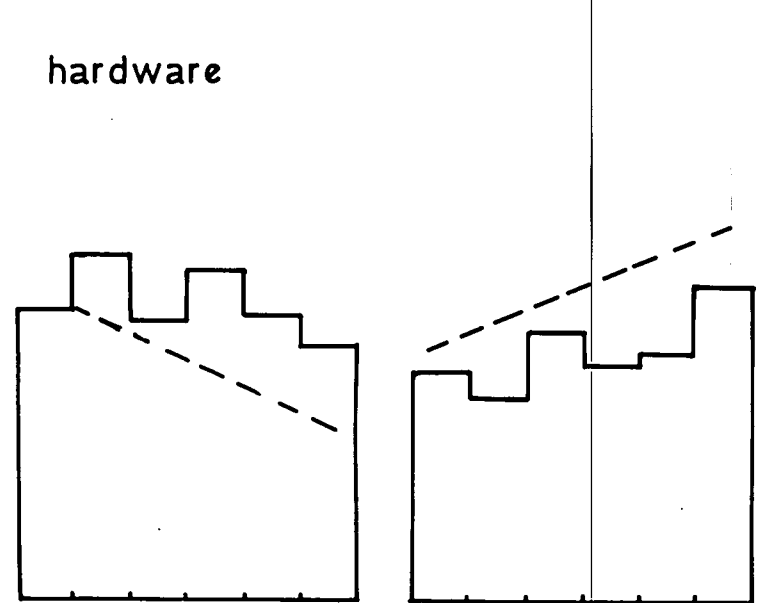
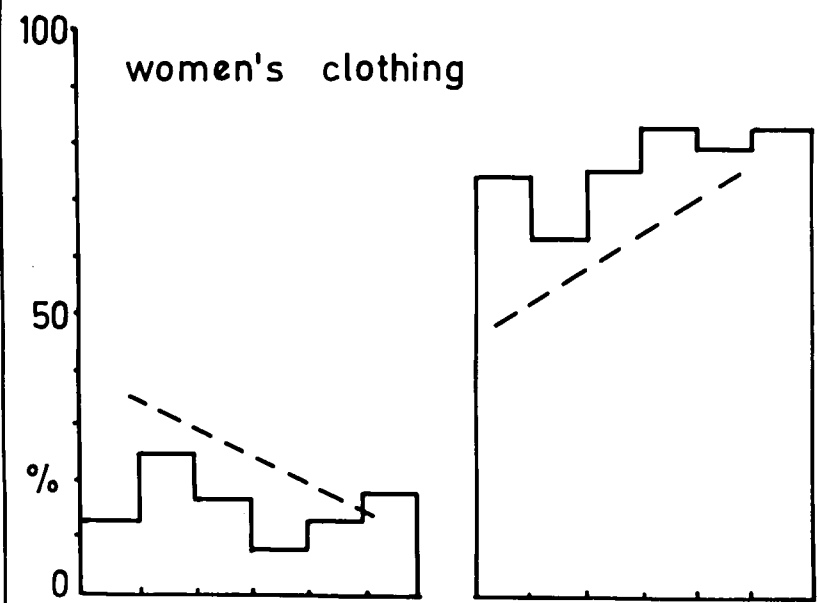
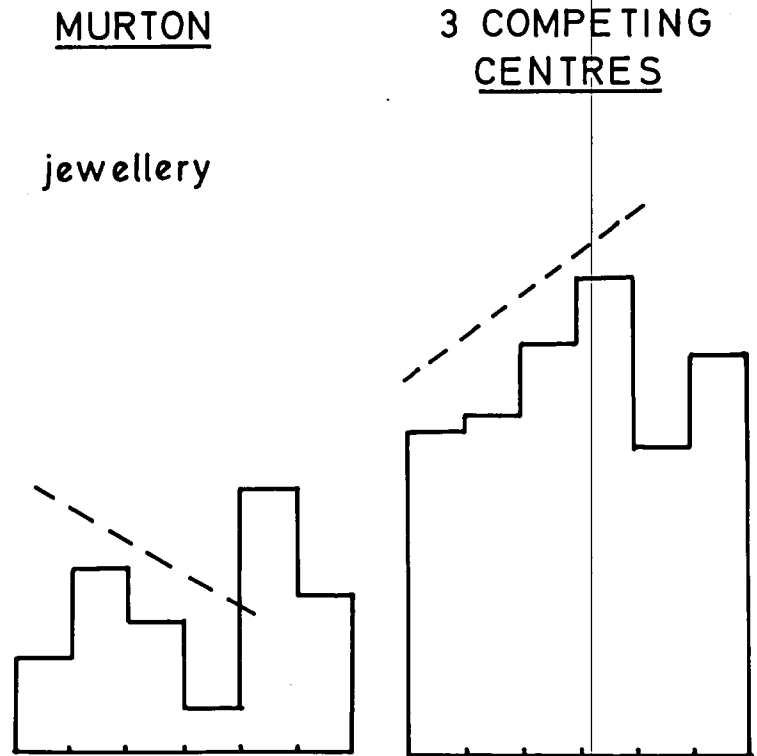
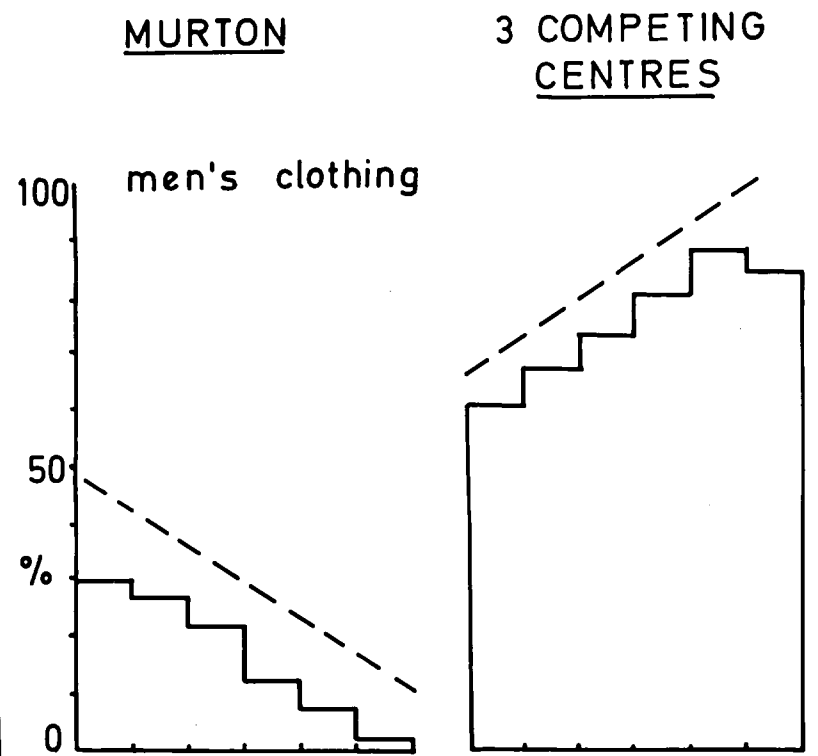


(a)

HOUSEHOLD SOCIO-ECONOMIC GROUP AND PURCHASE PATTERNS: MURTON



HOUSEHOLD INCOME GROUP AND PURCHASE PATTERNS:
MURTON.



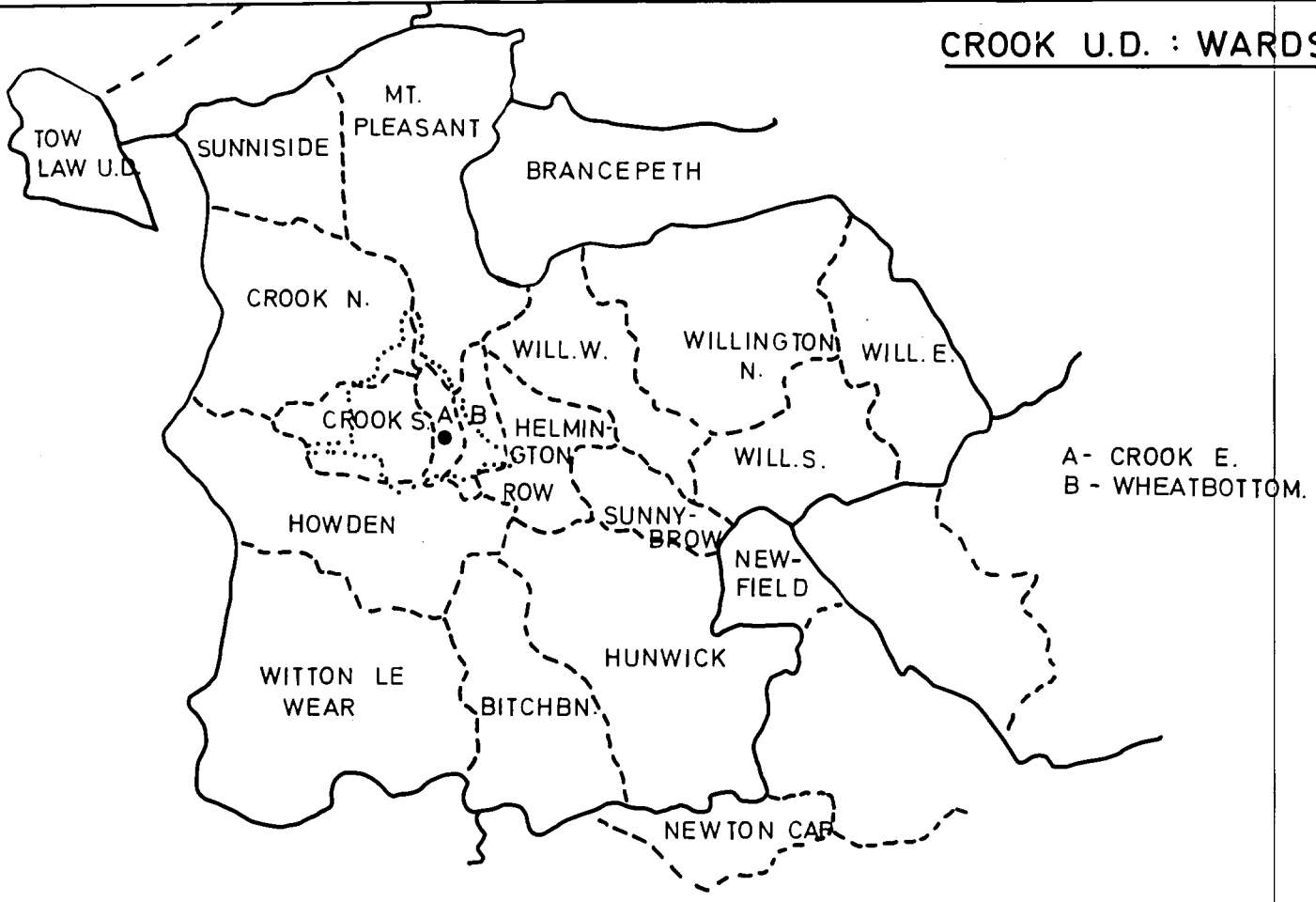
income group:

B C D E FG-H

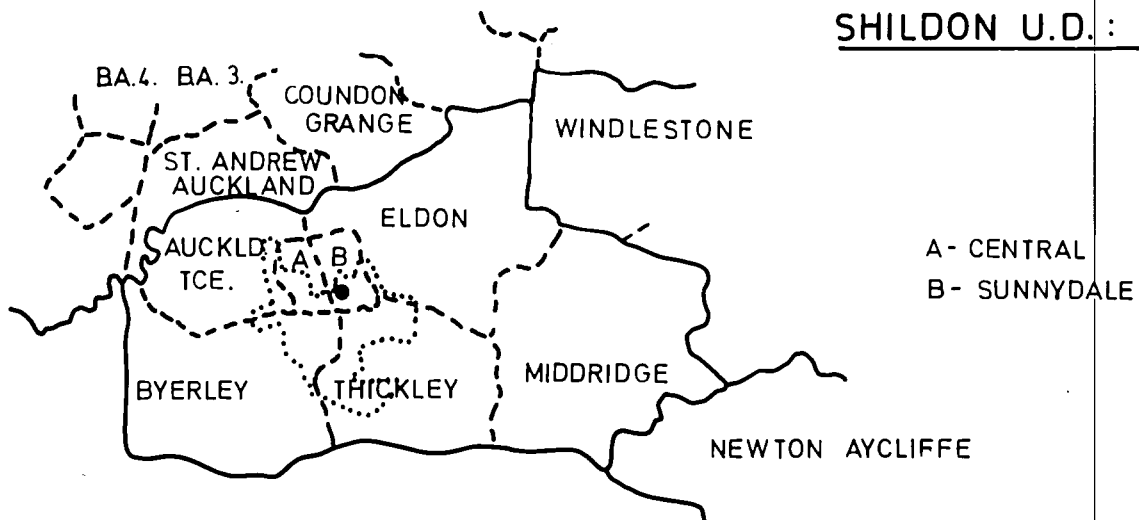
B C D E FG-H

B C D E FG-H

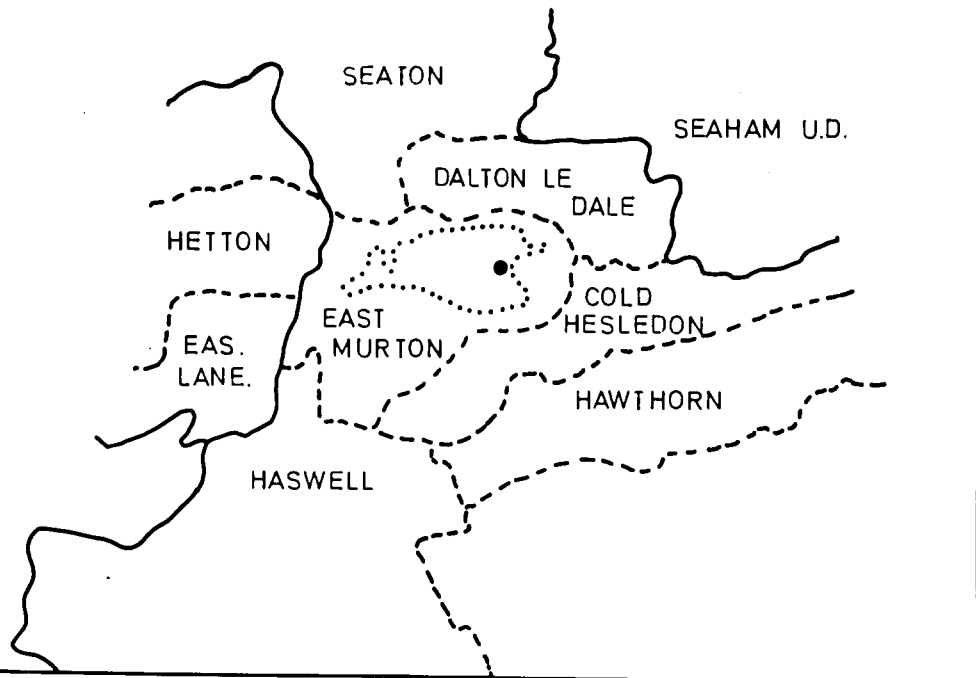
CROOK U.D. : WARDS.



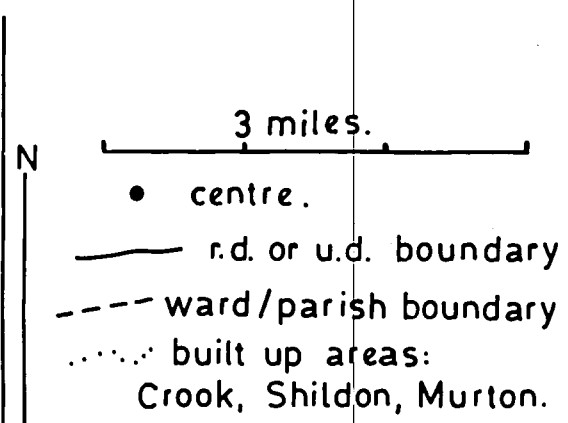
SHILDON U.D. : WARDS



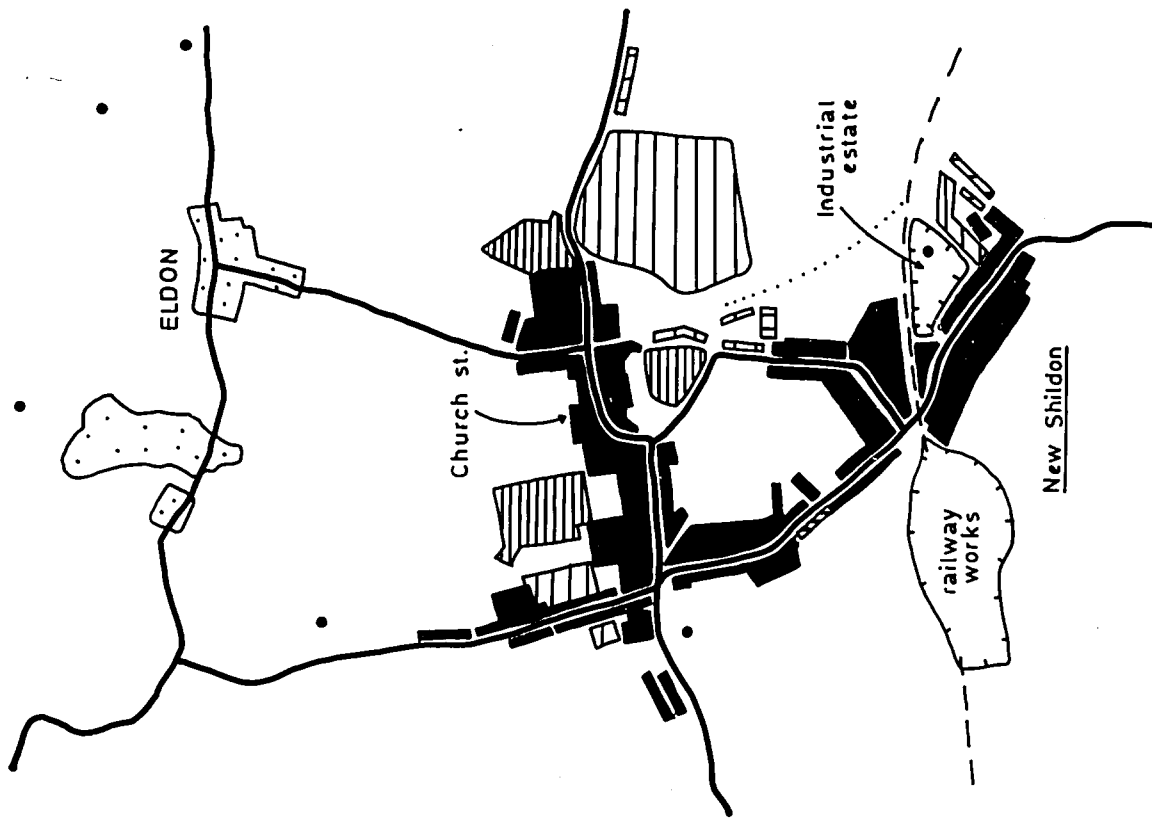
MURTON PARISH (EASINGTON R.D.)



common key



1967



SHILDON: MORPHOLOGY

HOUSING (1967 ONLY)

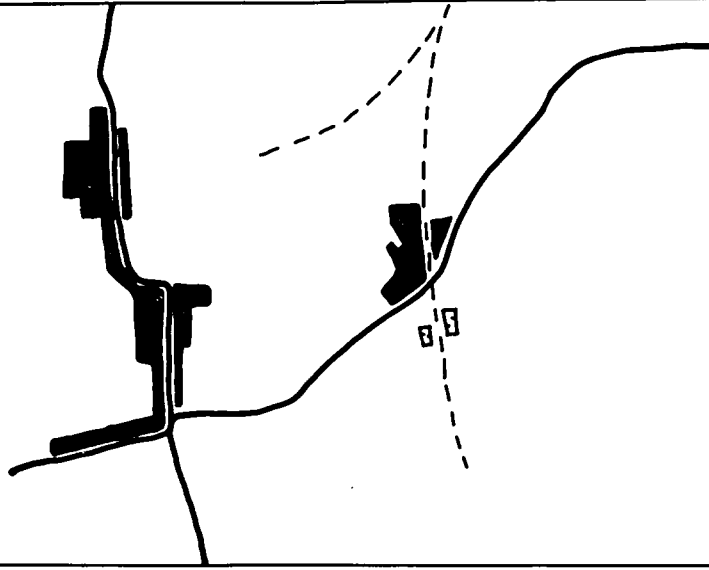
- mainly pre 1900
- ▨ mainly 1900-1939
- ▧ mainly 1900-1939 private
- ▩ mainly post 1945:council
- mainly post 1945:private
- other settlements

- pit
- disused pit
- - - railway
- · - · - disused railway

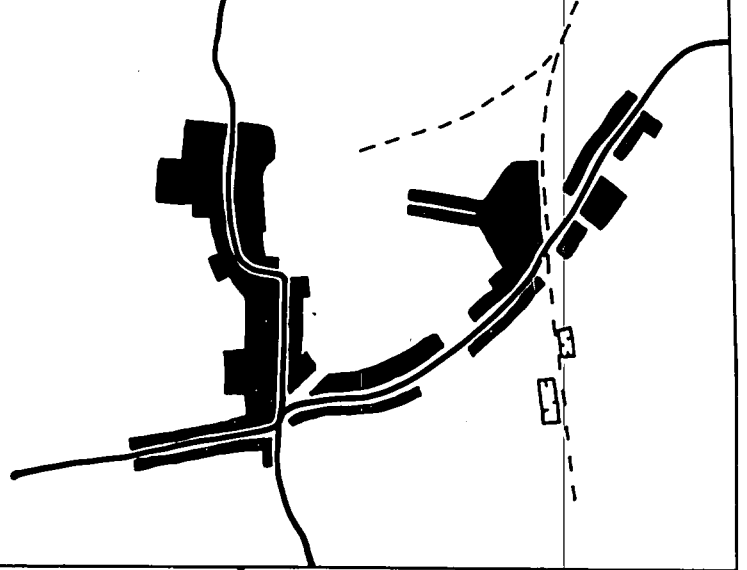
N

3 m.

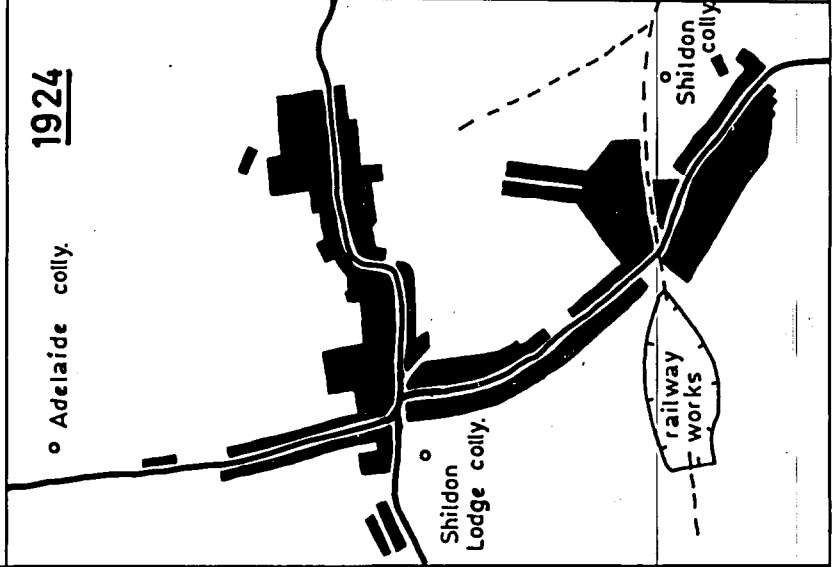
1860



1894

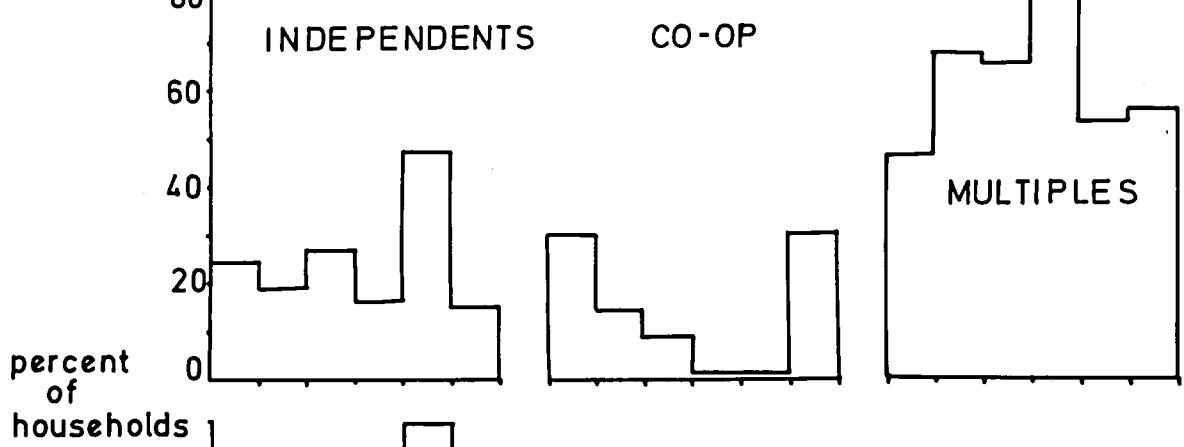


1924

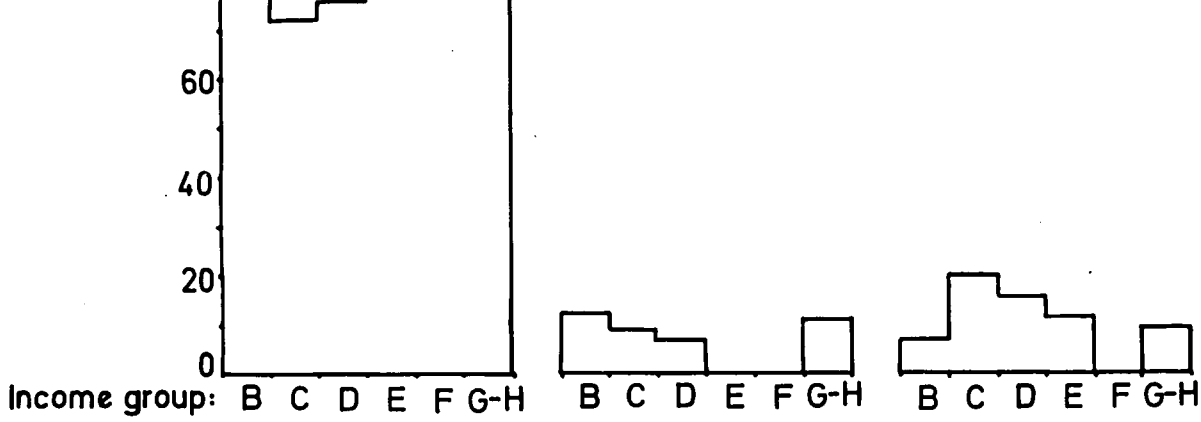


INCOME GROUP AND HOUSEHOLD PURCHASE PATTERNS - SHILDON

Groceries

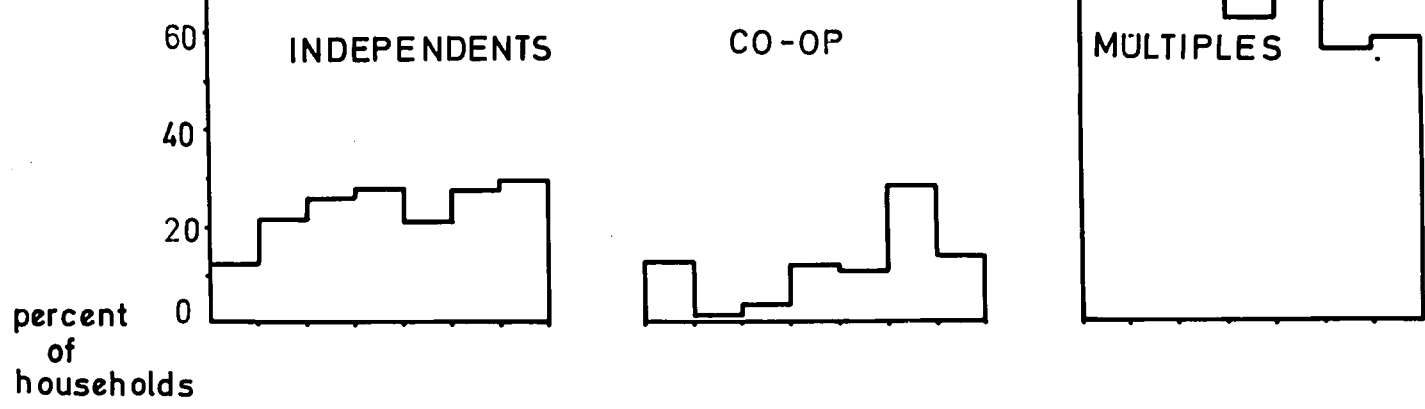


Meat

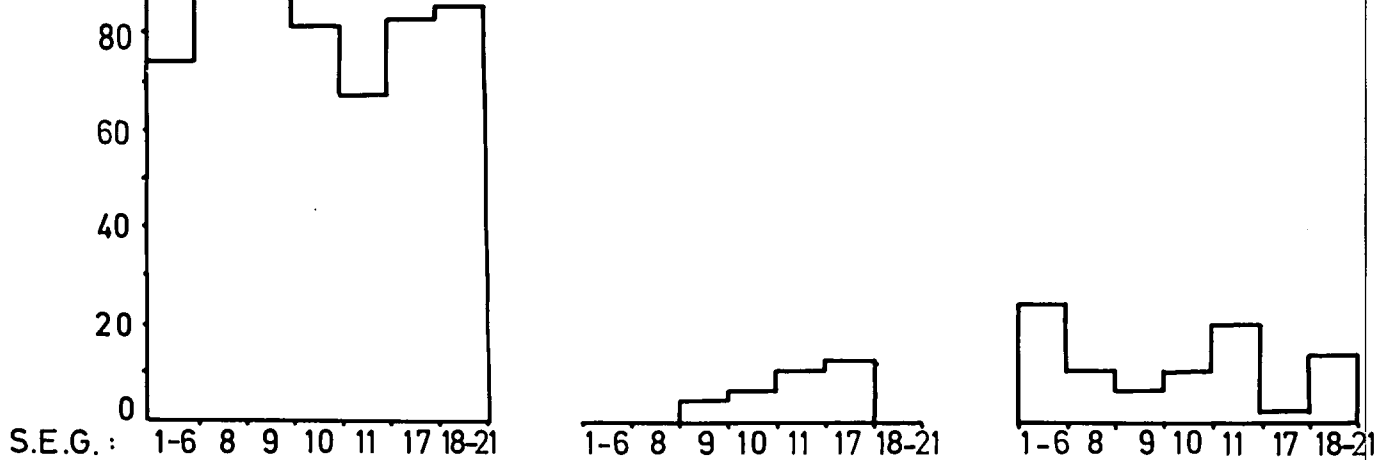


SOCIO-ECONOMIC GROUP AND HOUSEHOLD PURCHASE PATTERNS - SHILDON

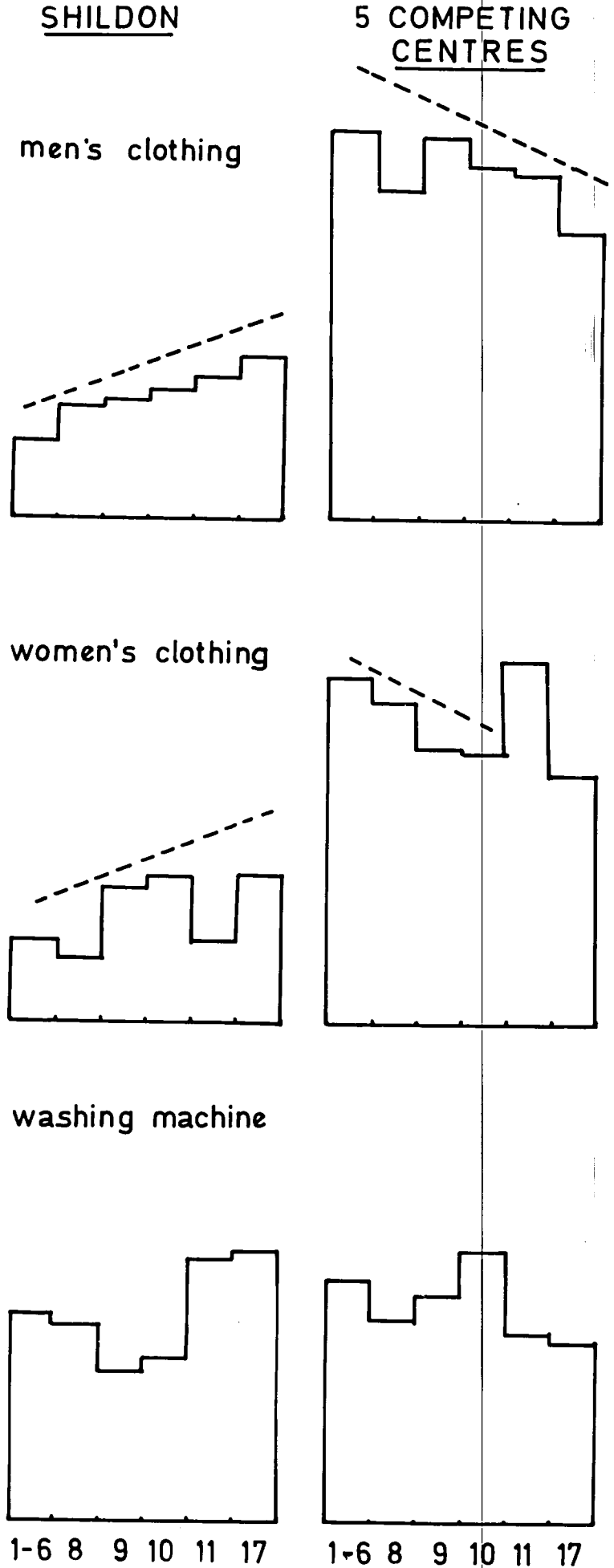
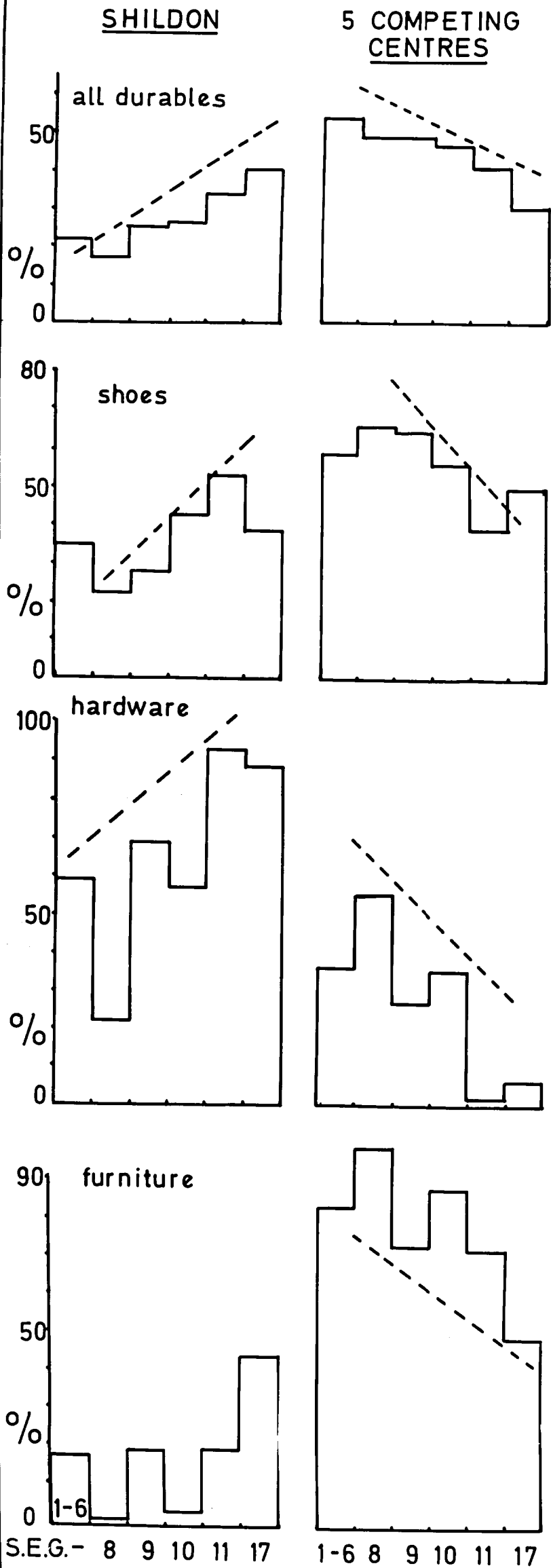
Groceries



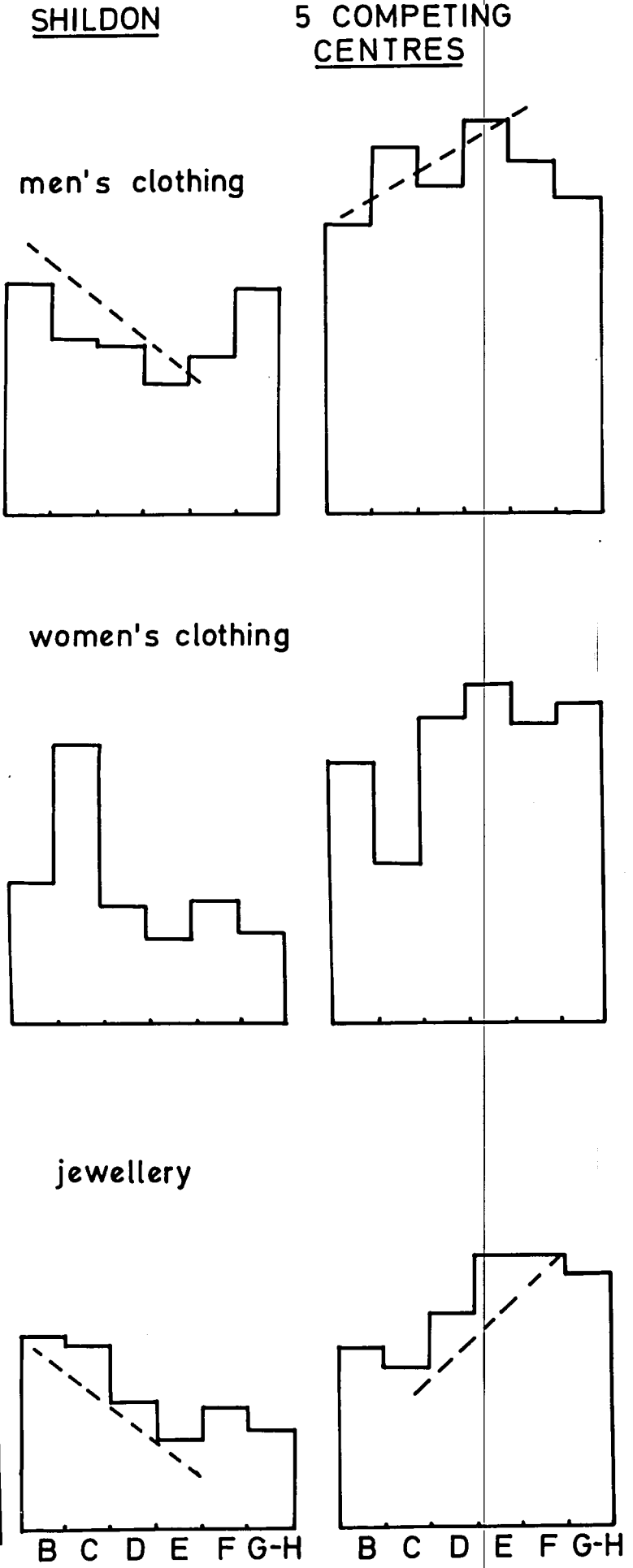
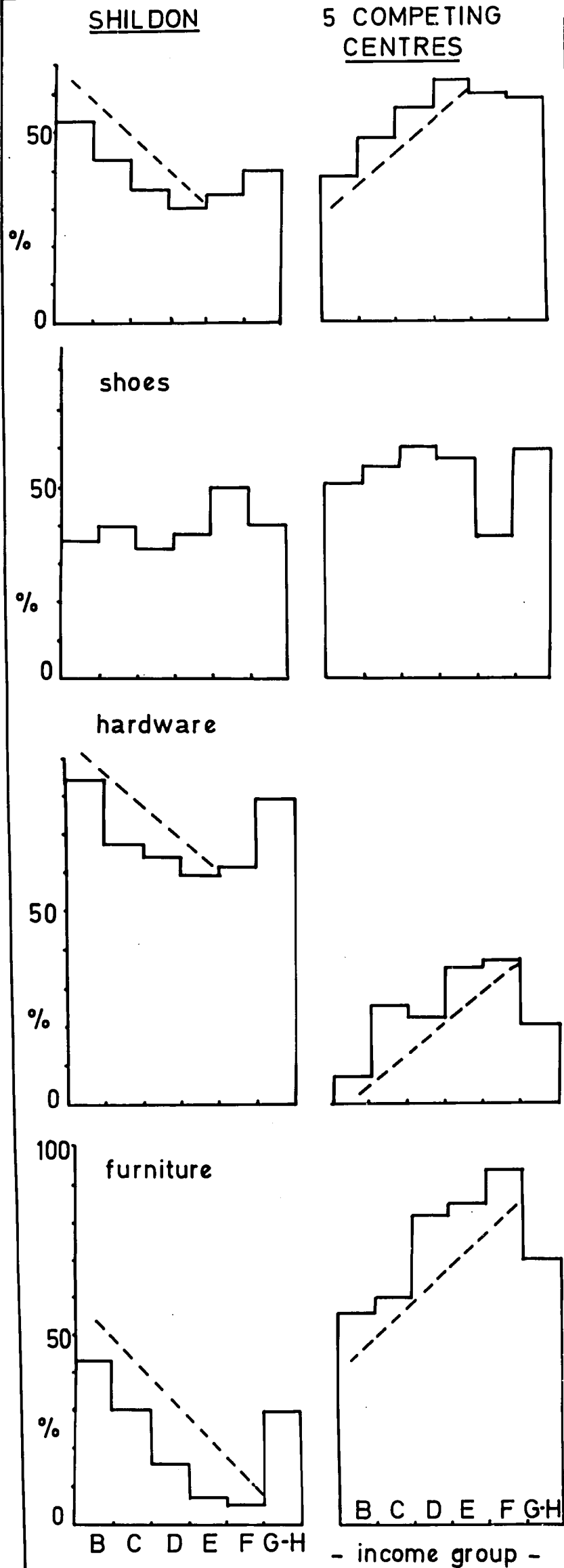
Meat

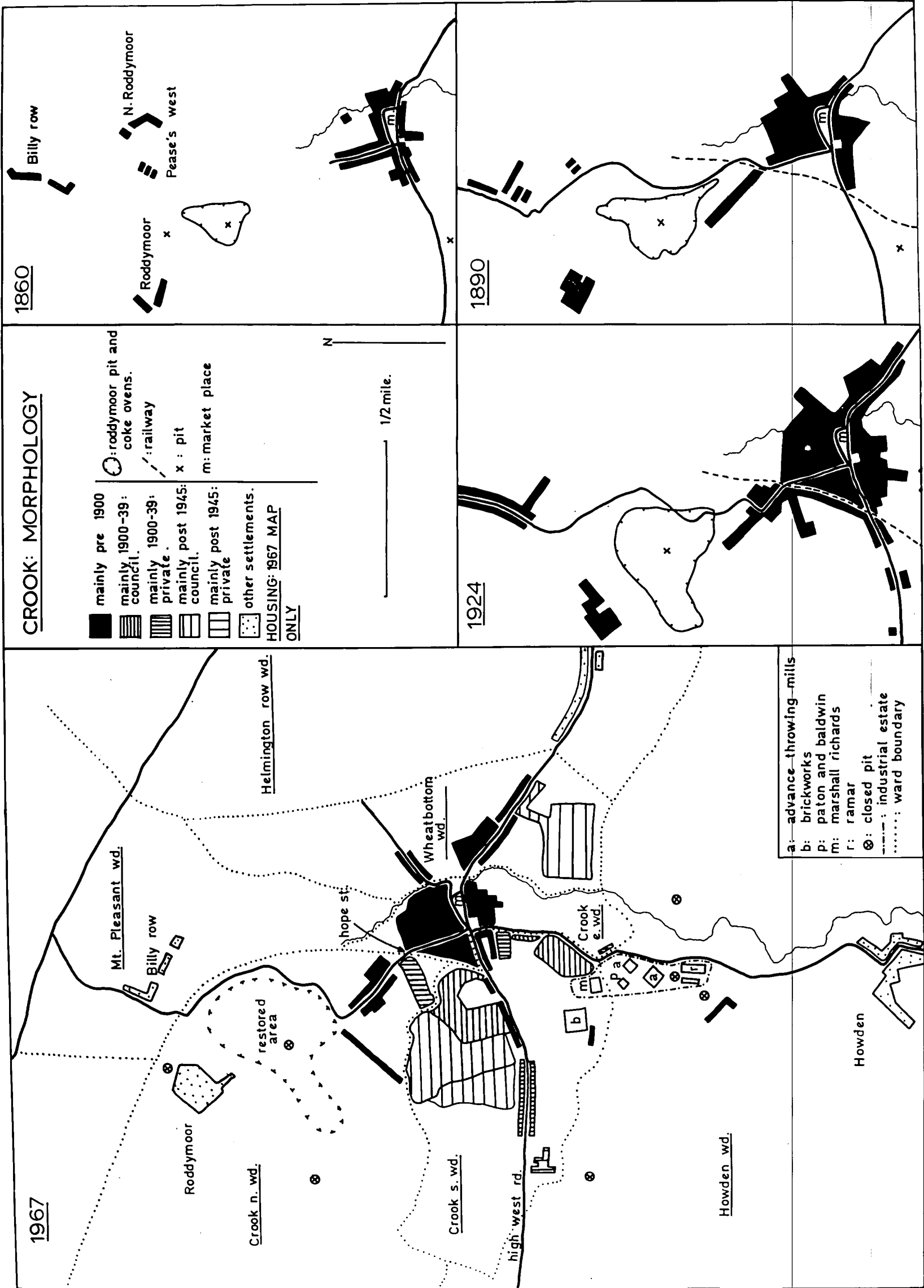


HOUSEHOLD SOCIO-ECONOMIC GROUP AND PURCHASE PATTERNS: SHILDON.

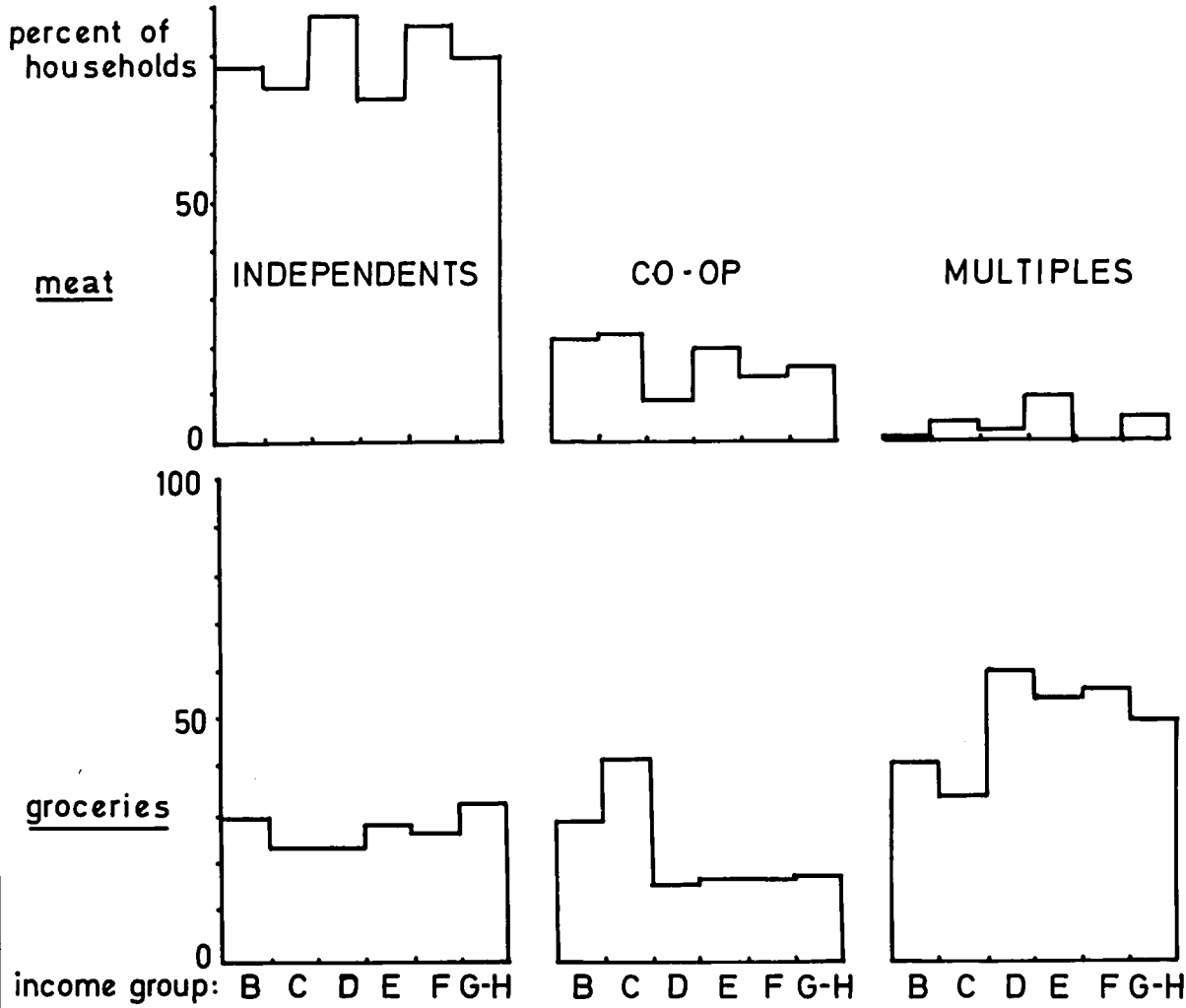


HOUSEHOLD INCOME GROUP AND PURCHASE PATTERNS: SHILDON.

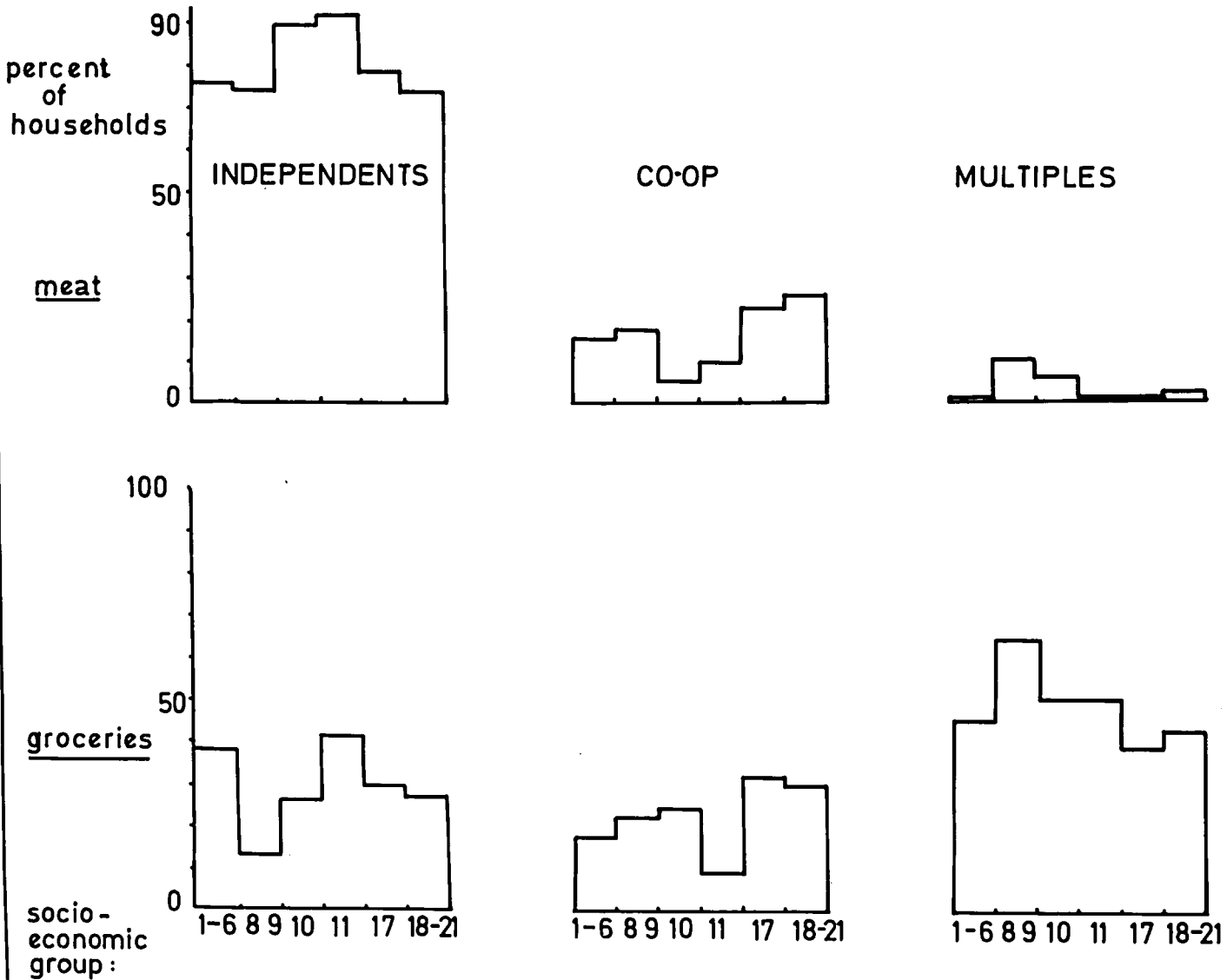




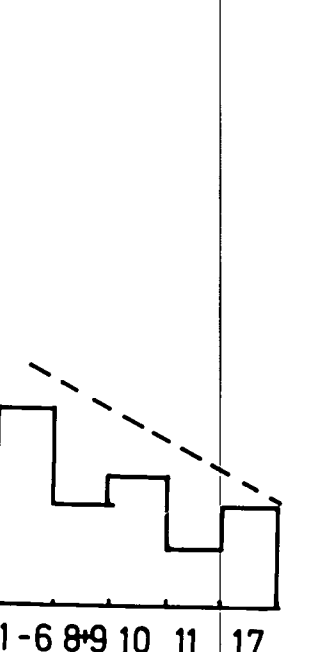
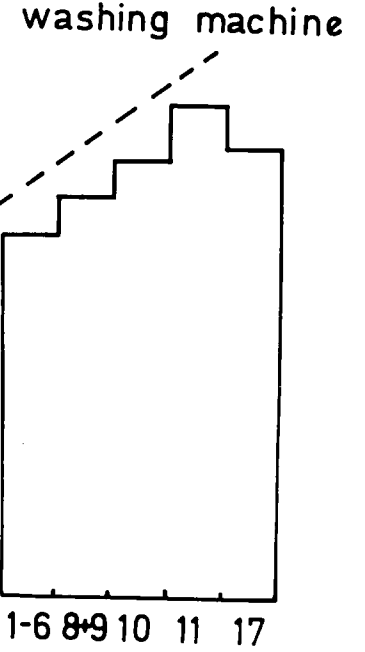
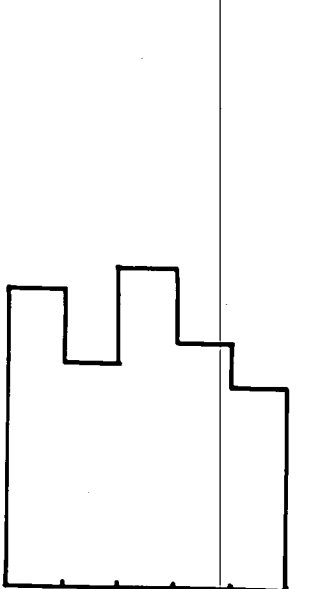
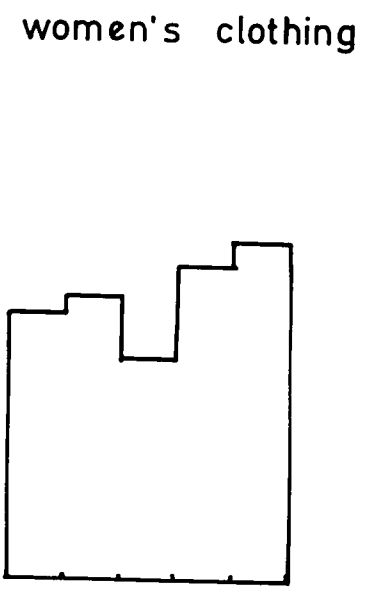
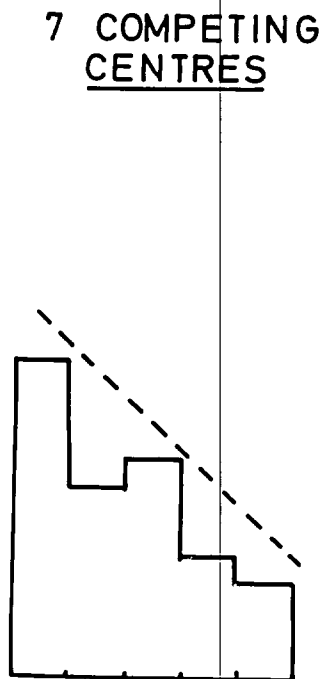
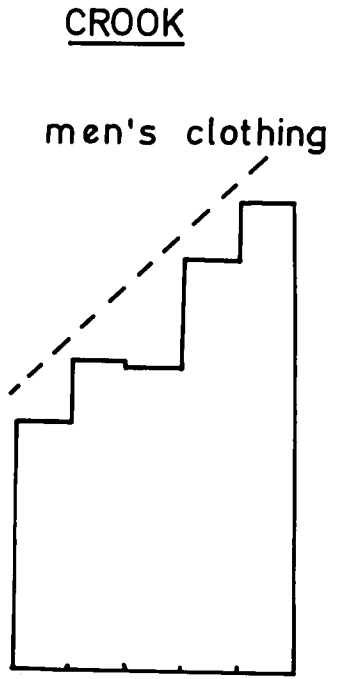
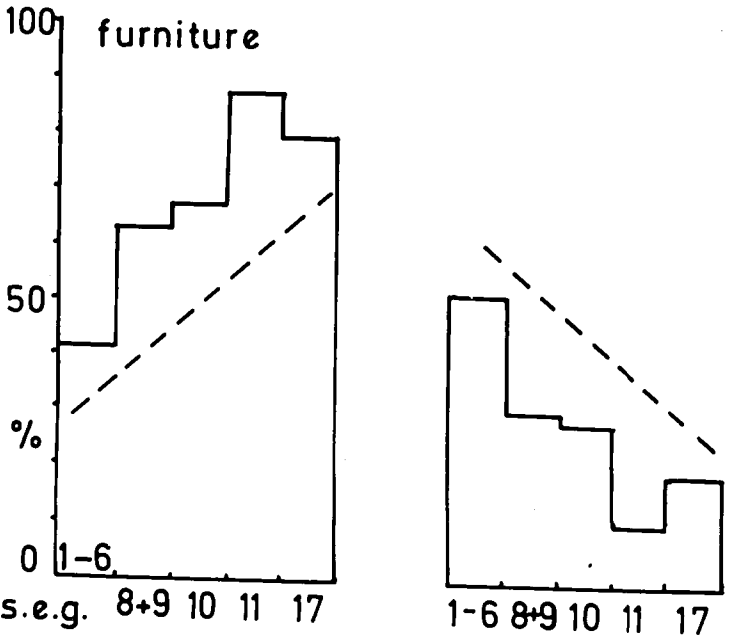
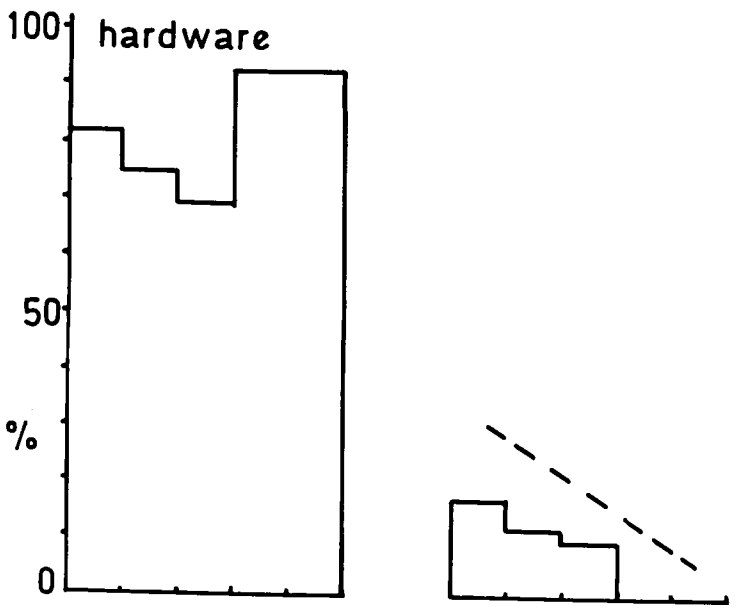
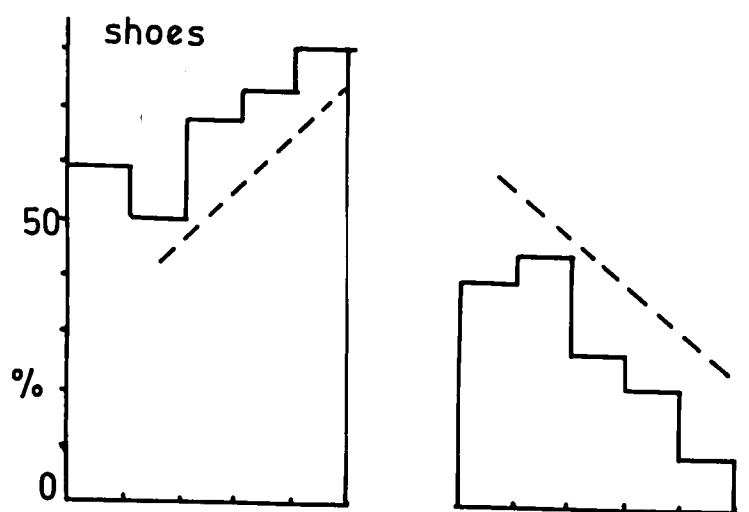
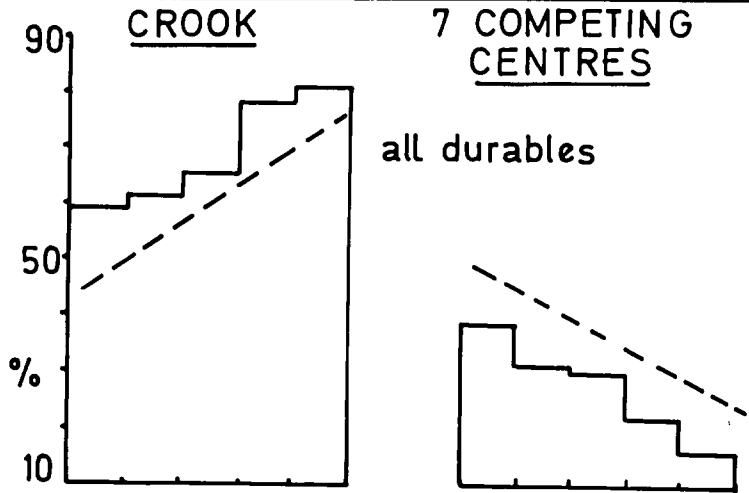
INCOME GROUP AND HOUSEHOLD PURCHASE PATTERNS: CROOK.



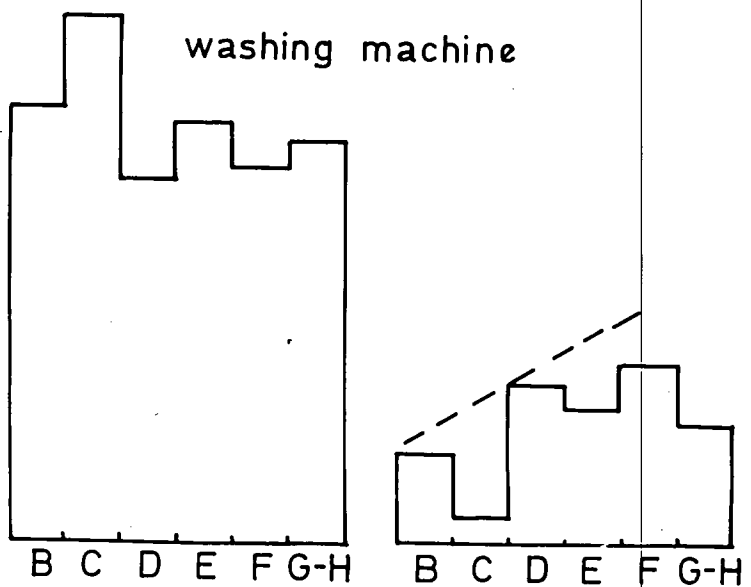
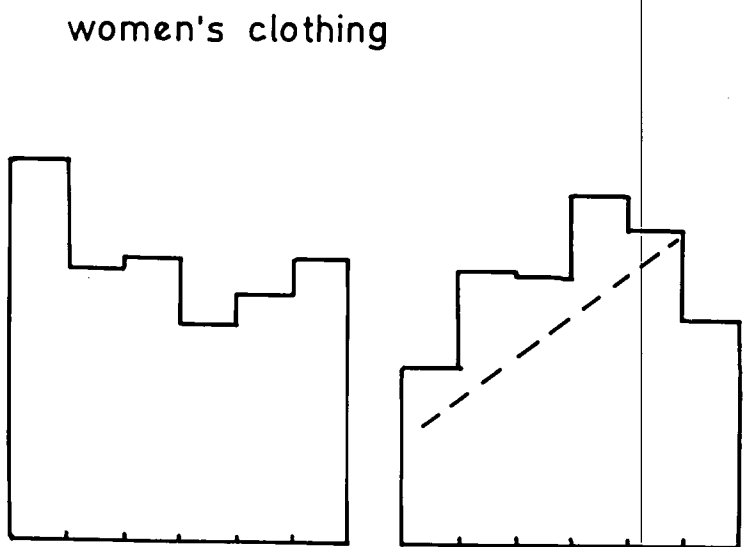
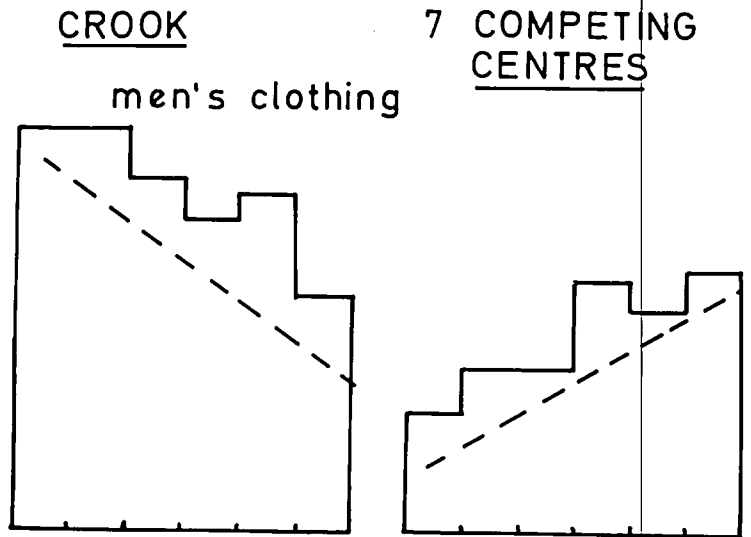
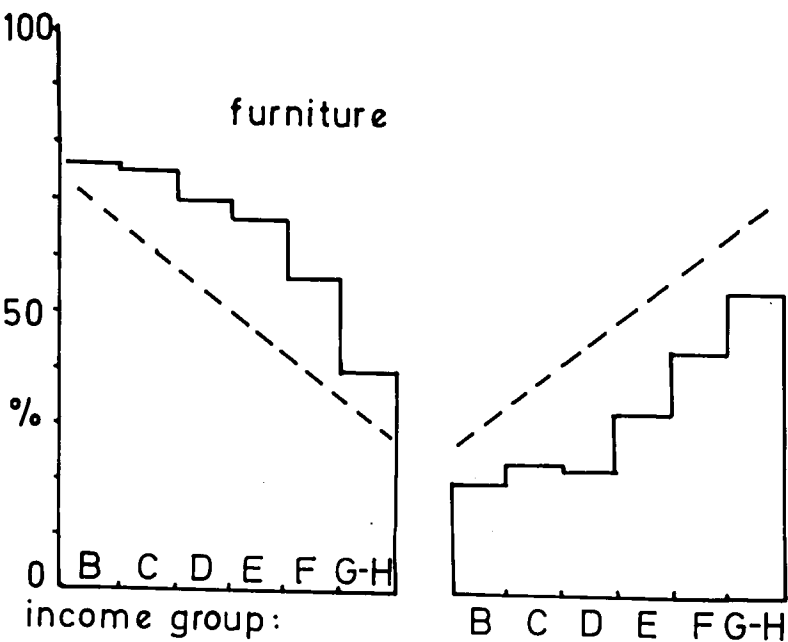
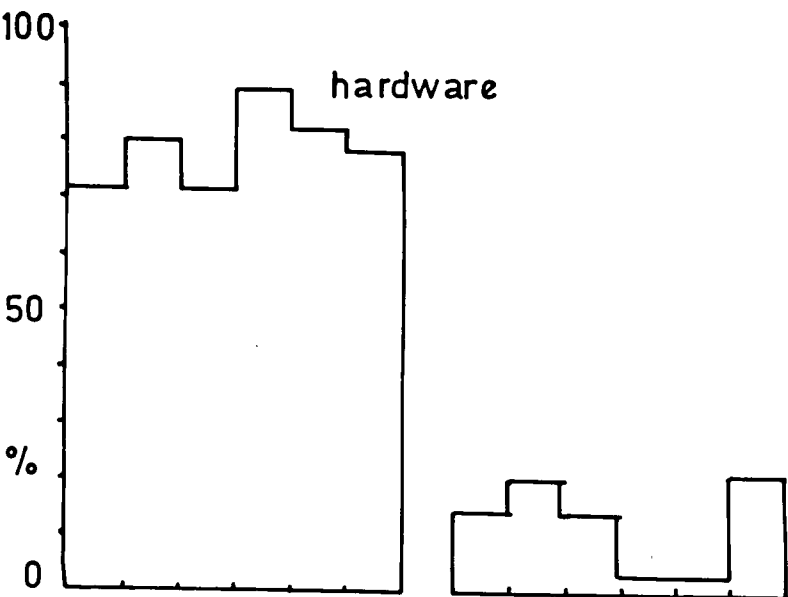
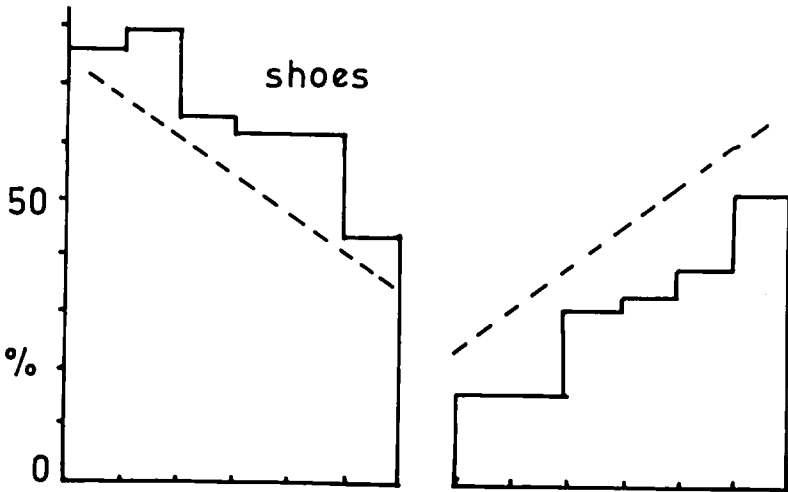
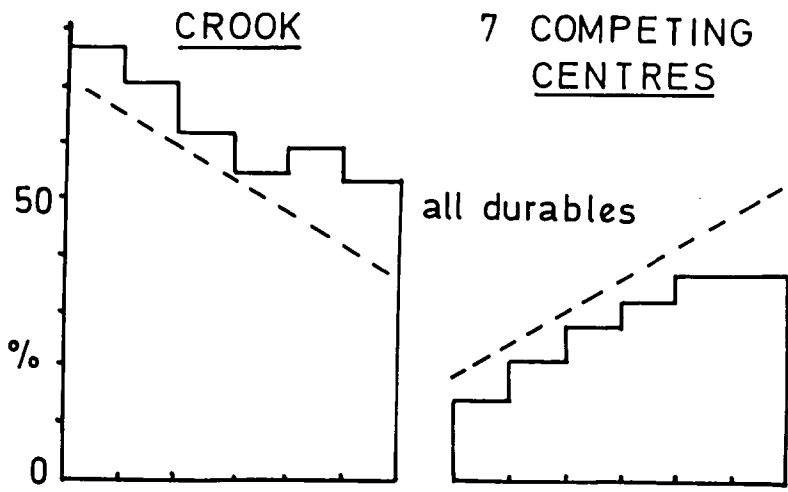
SOCIO-ECONOMIC GROUP AND HOUSEHOLD PURCHASE PATTERNS: CROOK.



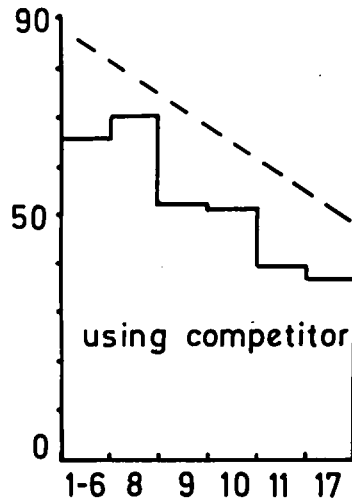
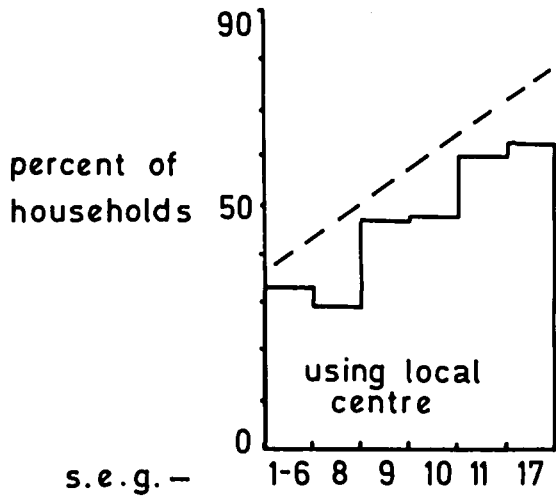
HOUSEHOLD SOCIO-ECONOMIC GROUP AND PURCHASE PATTERNS: CROOK.



HOUSEHOLD INCOME GROUP AND PURCHASE PATTERNS:
CROOK.



16.

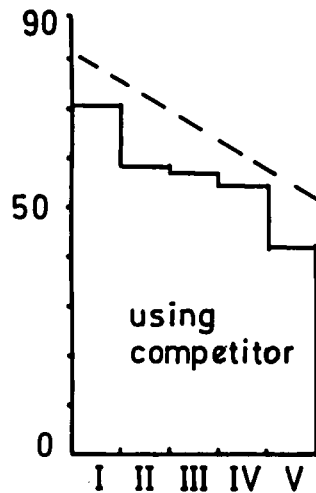
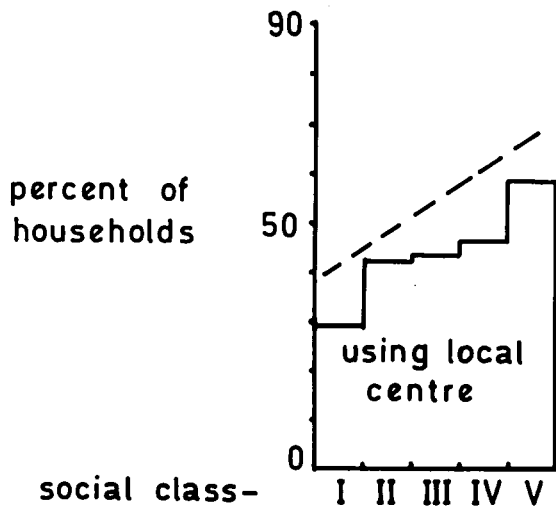


SOCIO-ECONOMIC GROUP AND HOUSEHOLD PURCHASE PATTERNS:

all durables.

Crook, Murton and Shildon.

17.

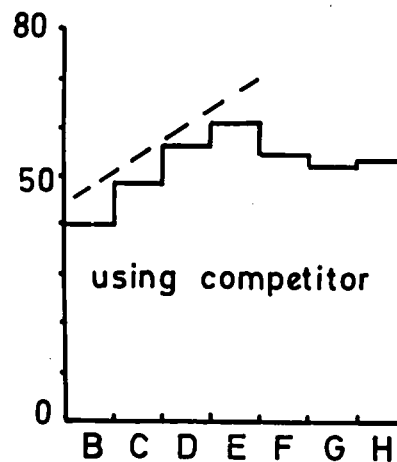
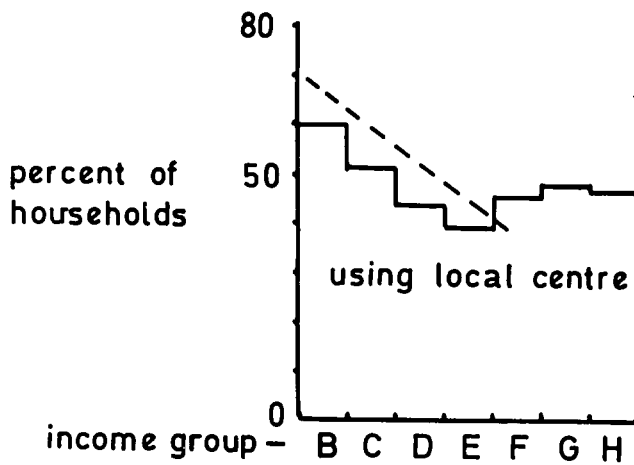


SOCIAL CLASS AND HOUSEHOLD PURCHASE PATTERNS:

all durables.

Crook, Murton and Shildon.

18.



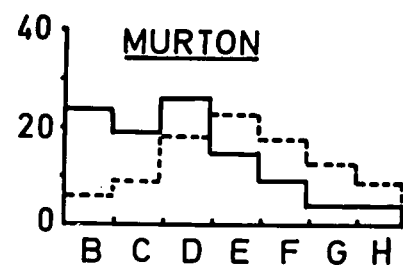
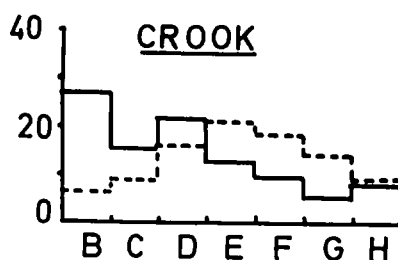
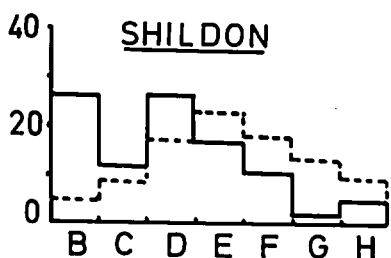
INCOME GROUP AND HOUSEHOLD PURCHASE PATTERNS:

all durables.

Crook, Murton and Shildon.

19.

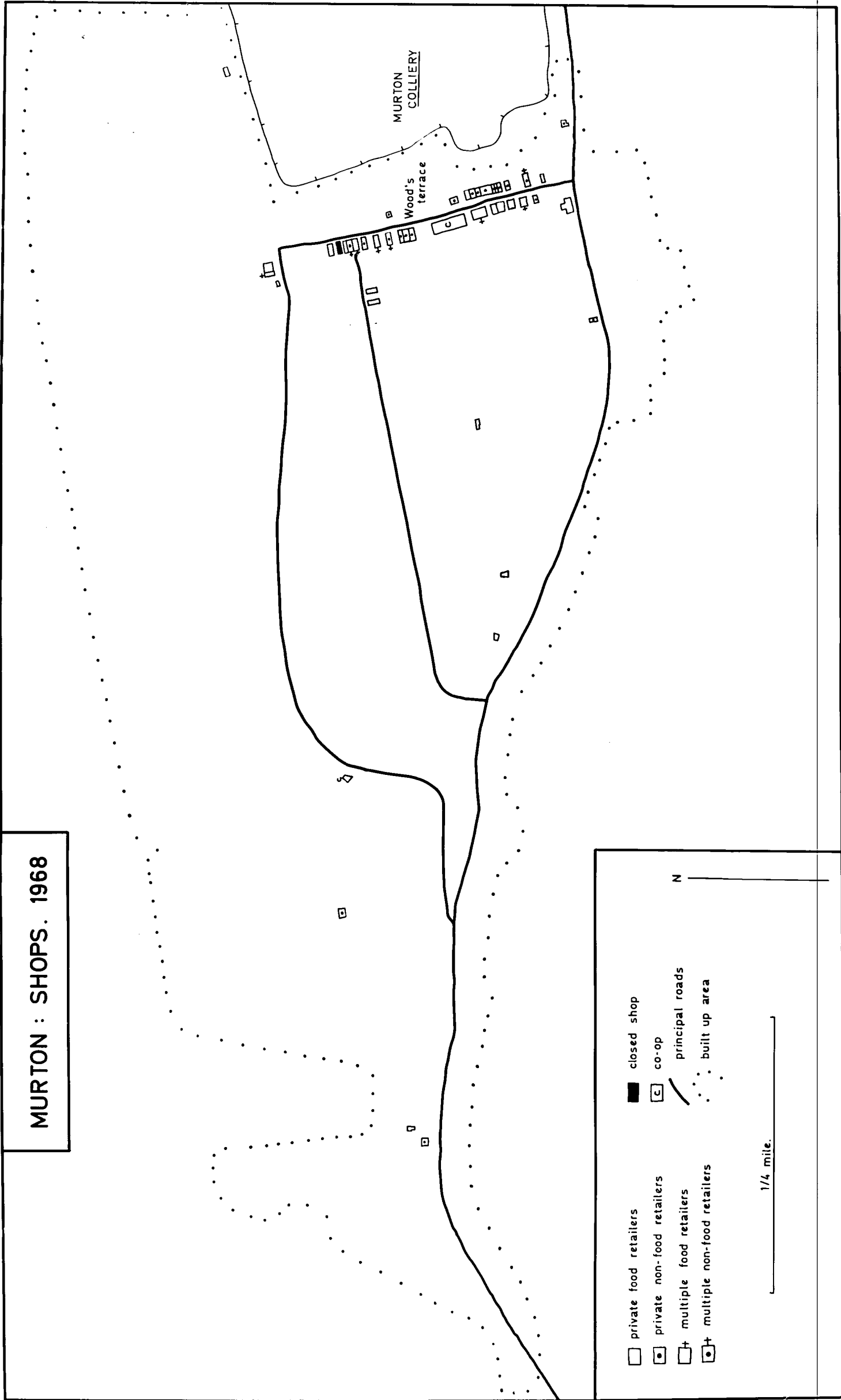
PREDICTED AND ACTUAL INCOME STRUCTURES. 1967.



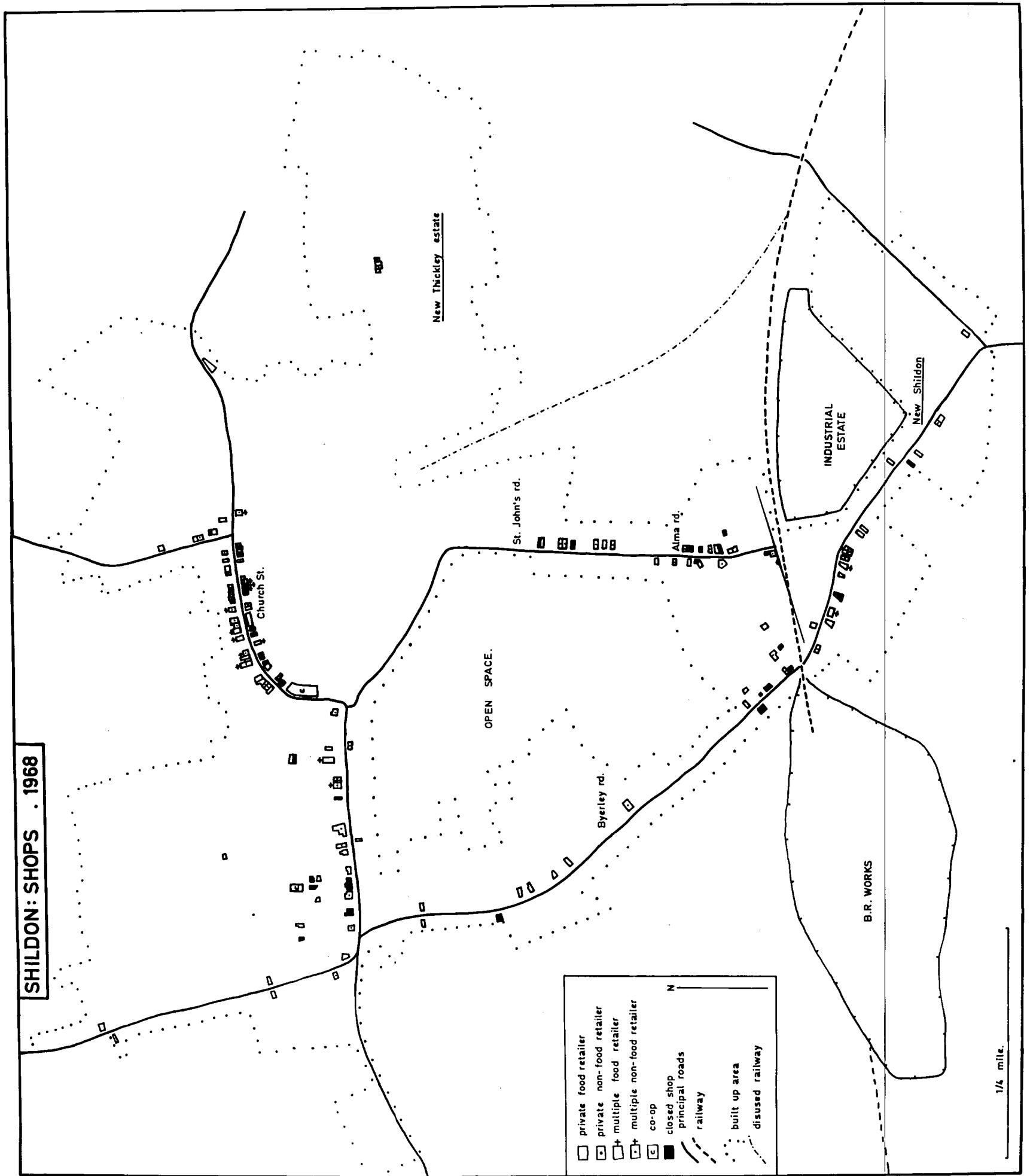
----- predicted

— actual

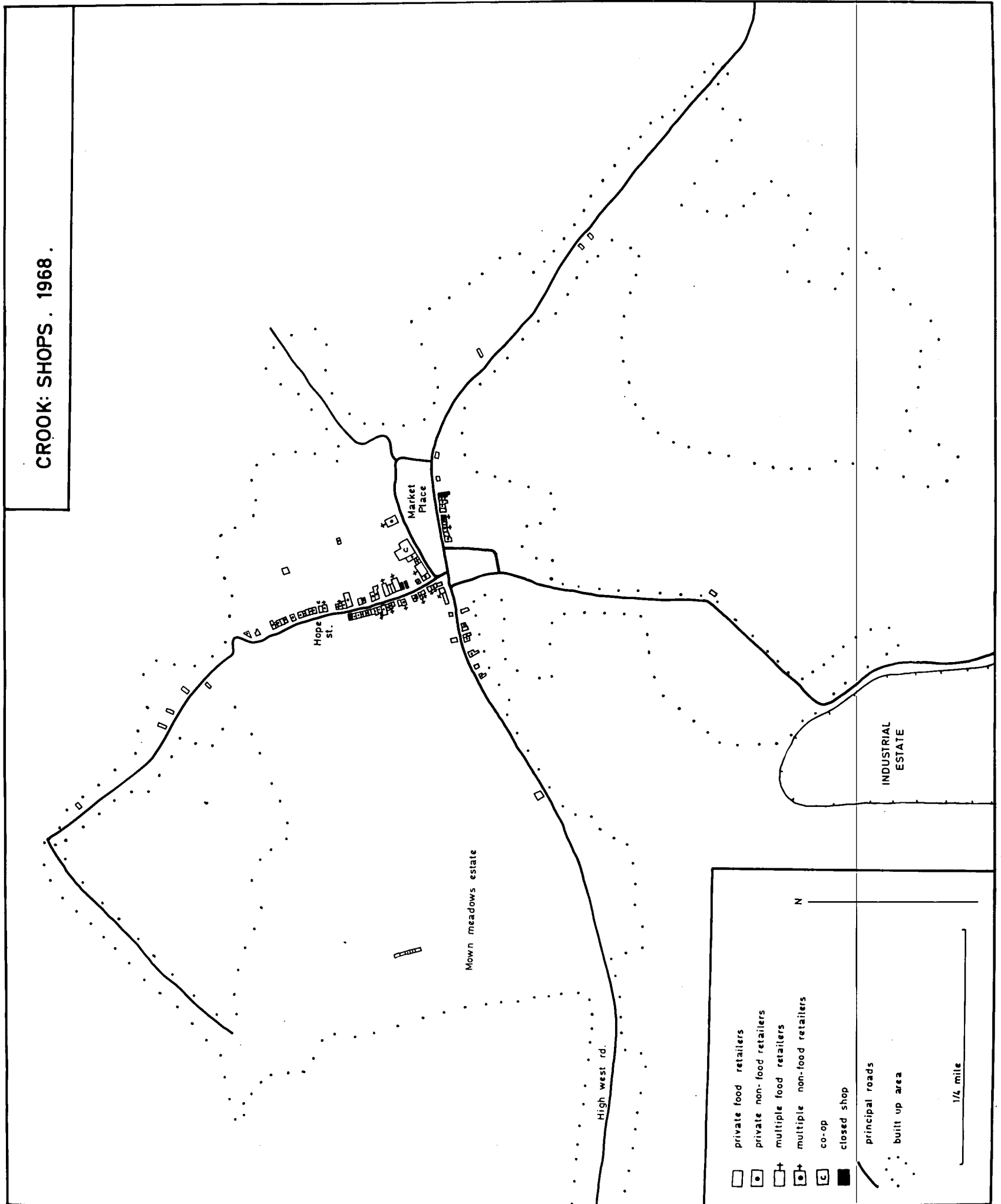
MURTON : SHOPS. 1968



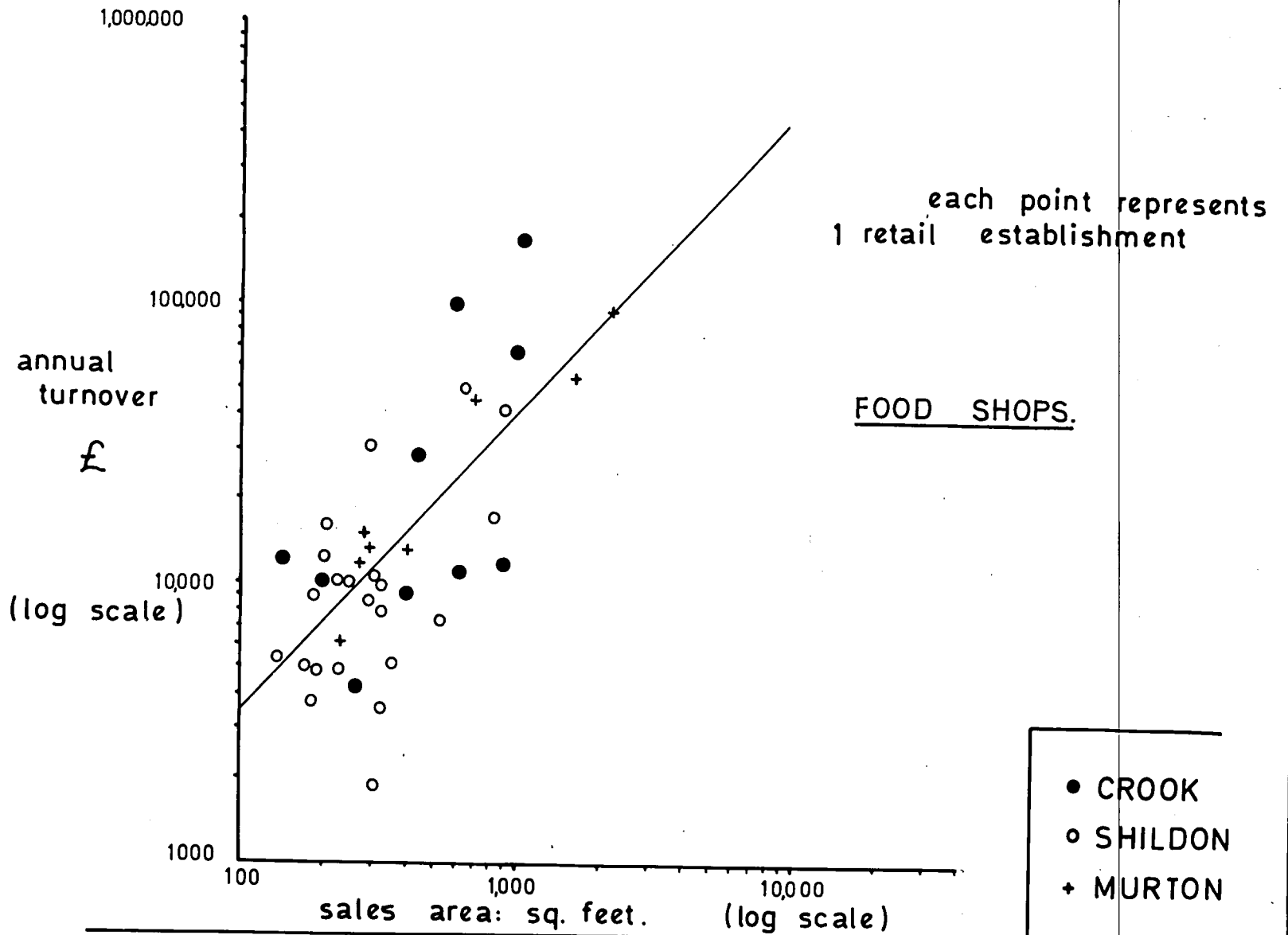
SHILDON: SHOPS · 1968



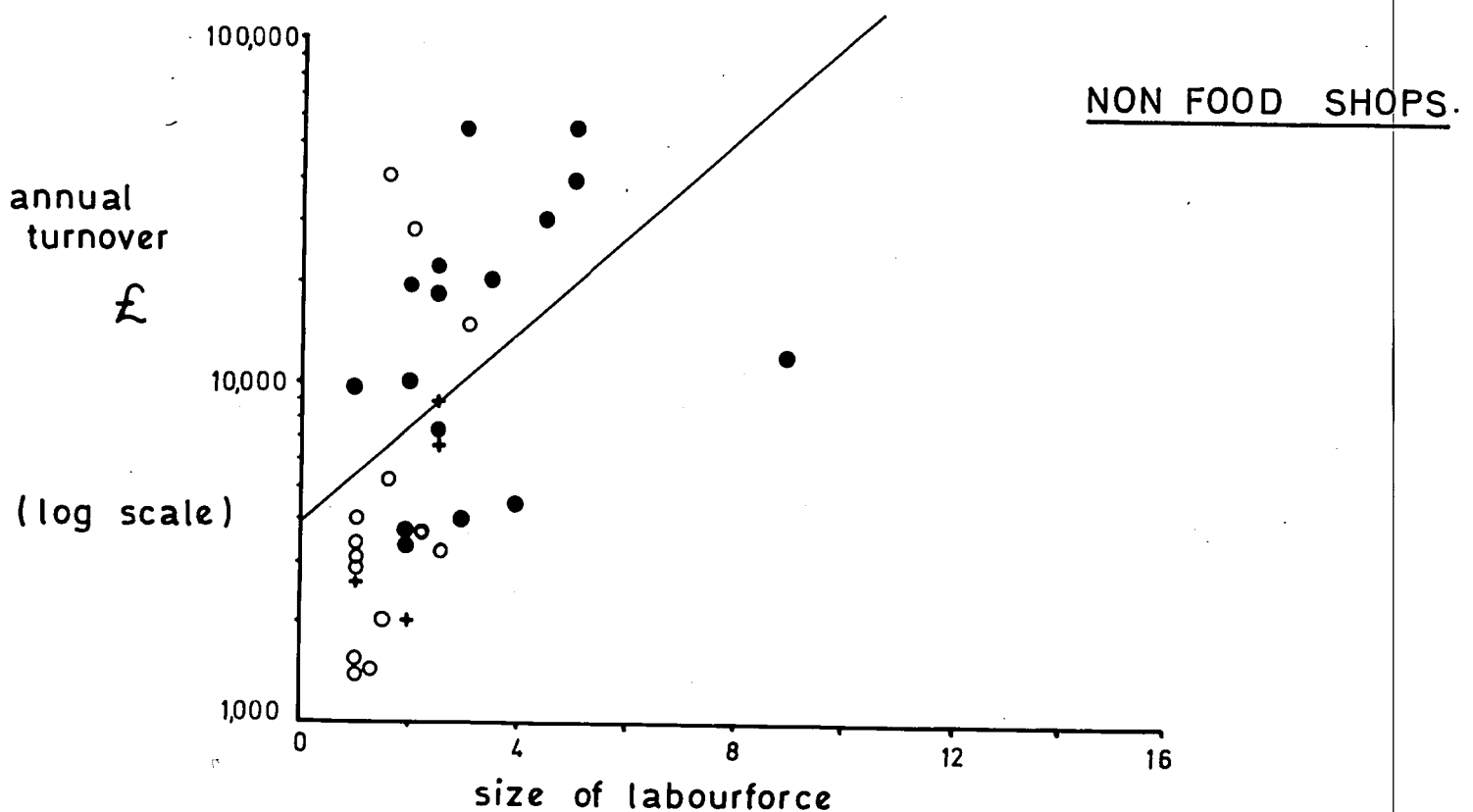
CROOK: SHOPS . 1968 .



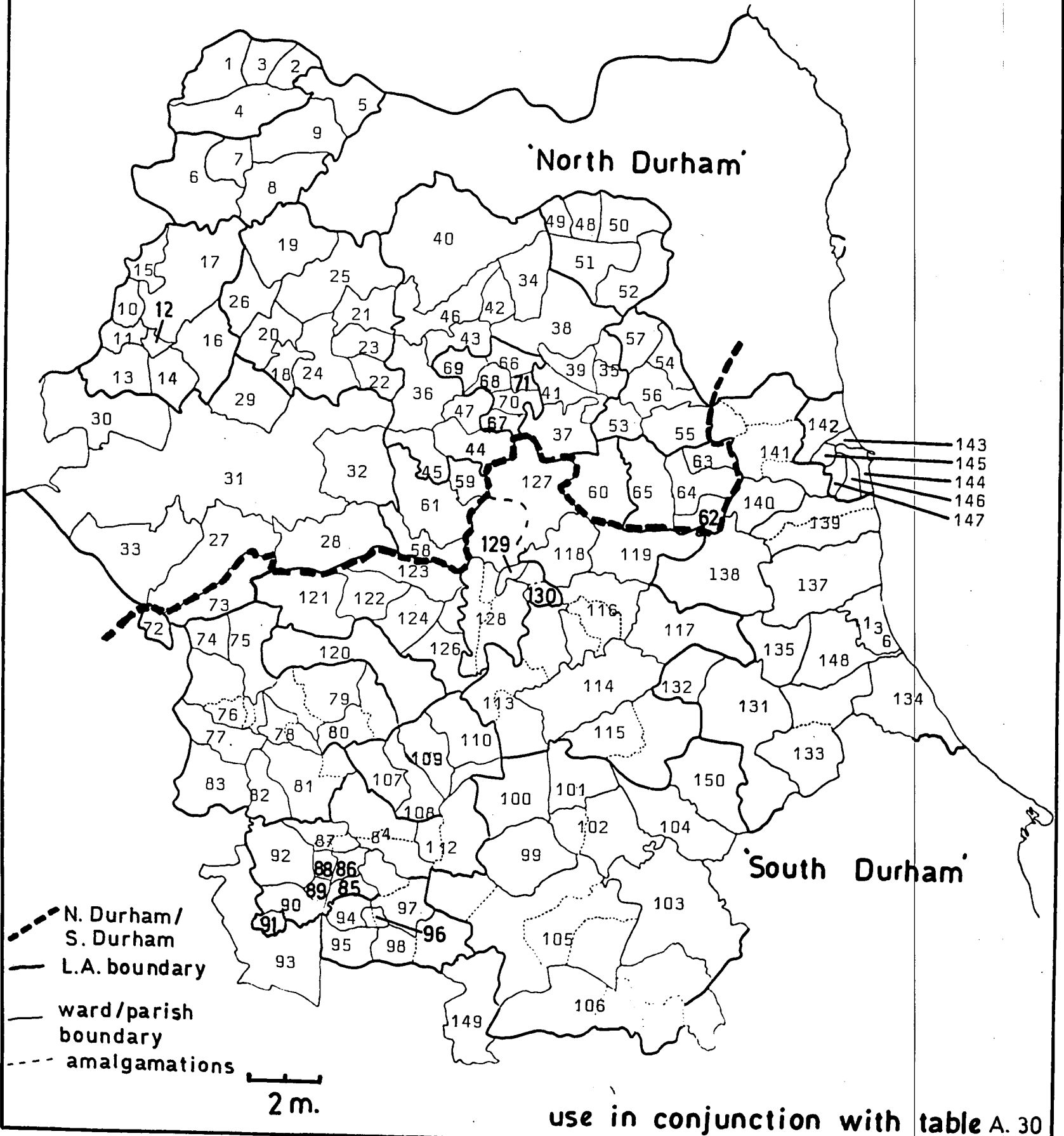
RELATIONSHIP OF TURNOVER TO SALES AREA : 3 SETTLEMENTS



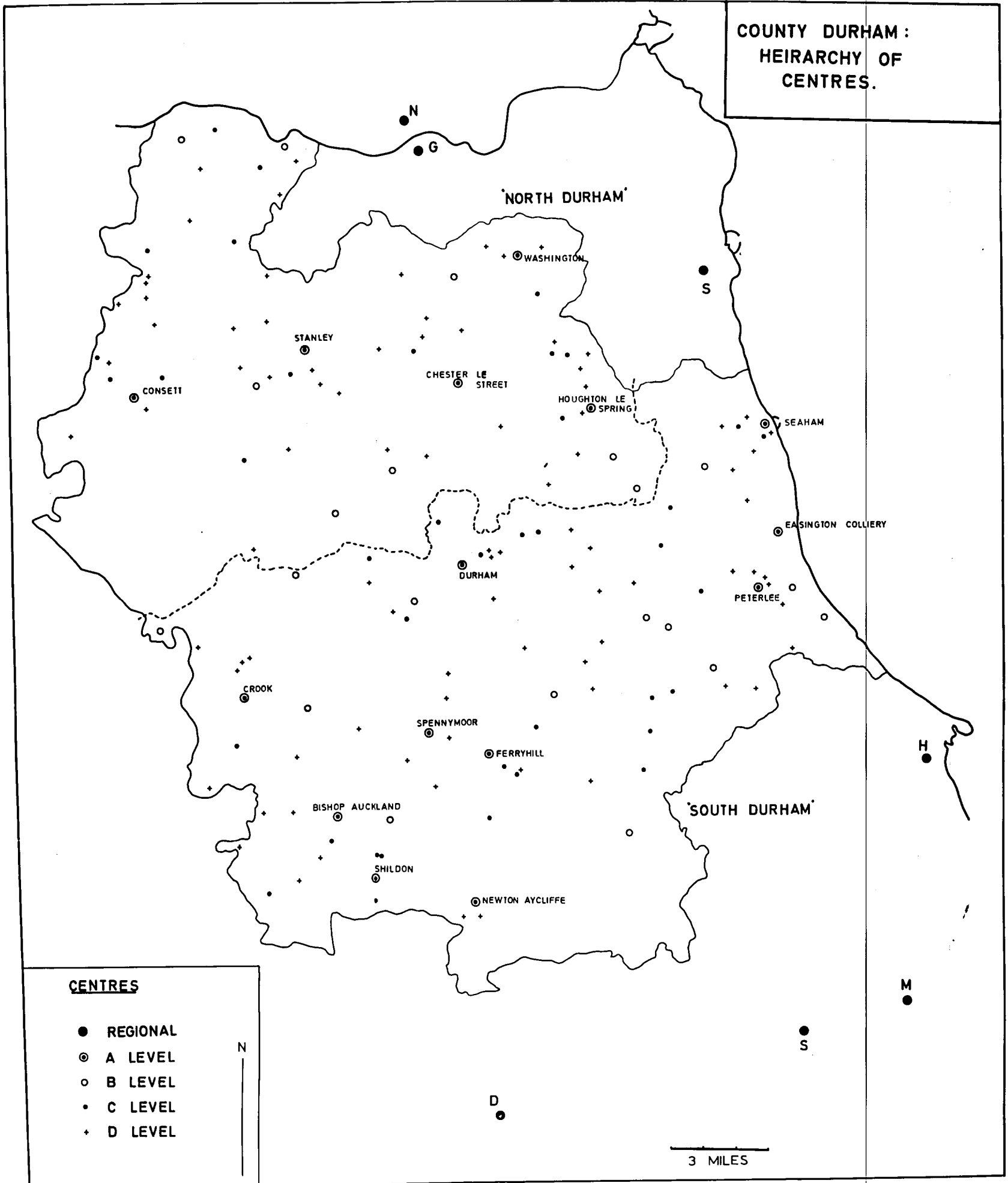
RELATIONSHIP OF TURNOVER TO SIZE OF LABOURFORCE : 3 SETTLEMENTS.



WARDS AND PARISHES USED IN THE ANALYSIS



**COUNTY DURHAM:
HEIRARCHY OF
CENTRES.**

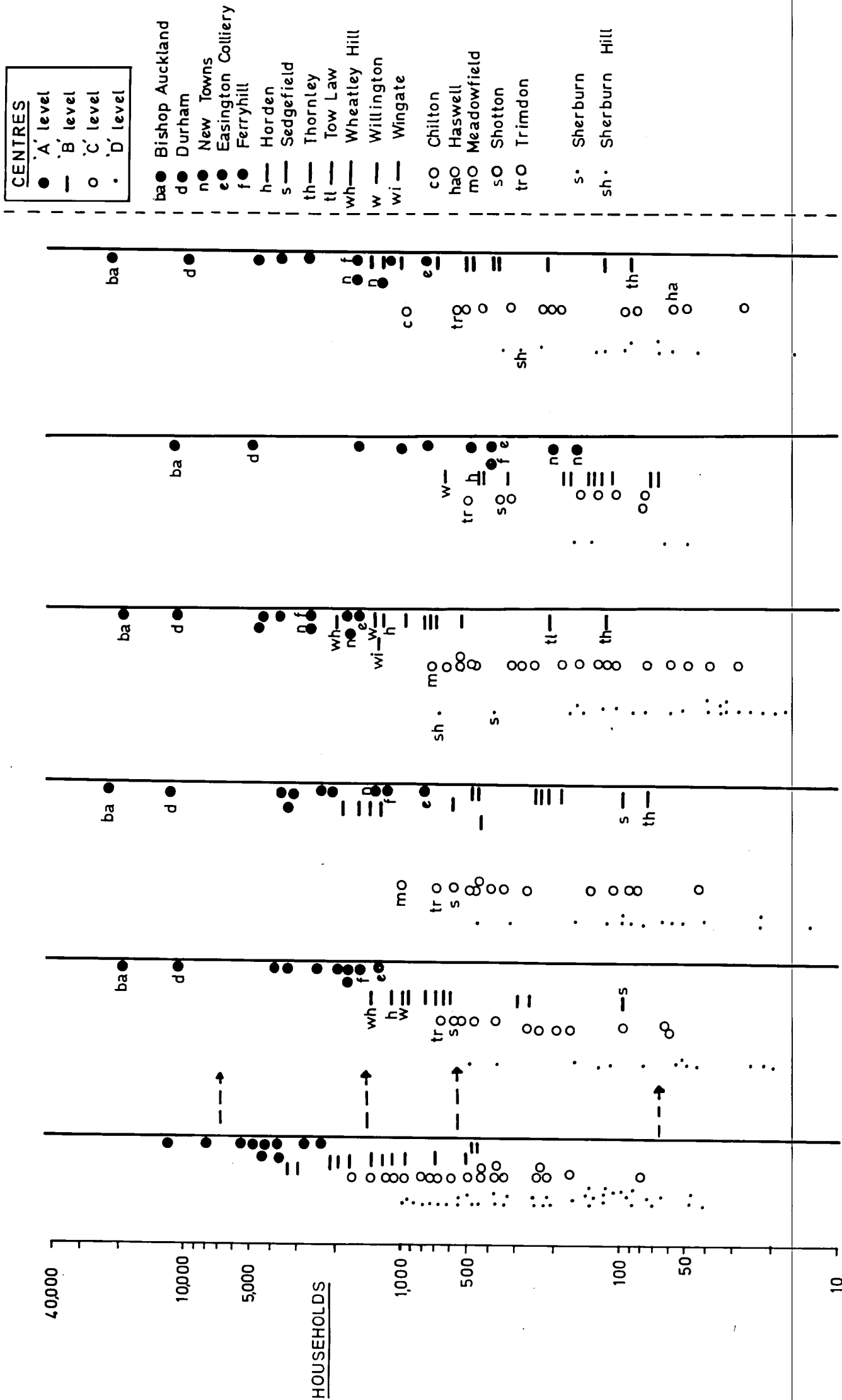


- CENTRES**
- REGIONAL
 - ⊙ A LEVEL
 - B LEVEL
 - C LEVEL
 - + D LEVEL

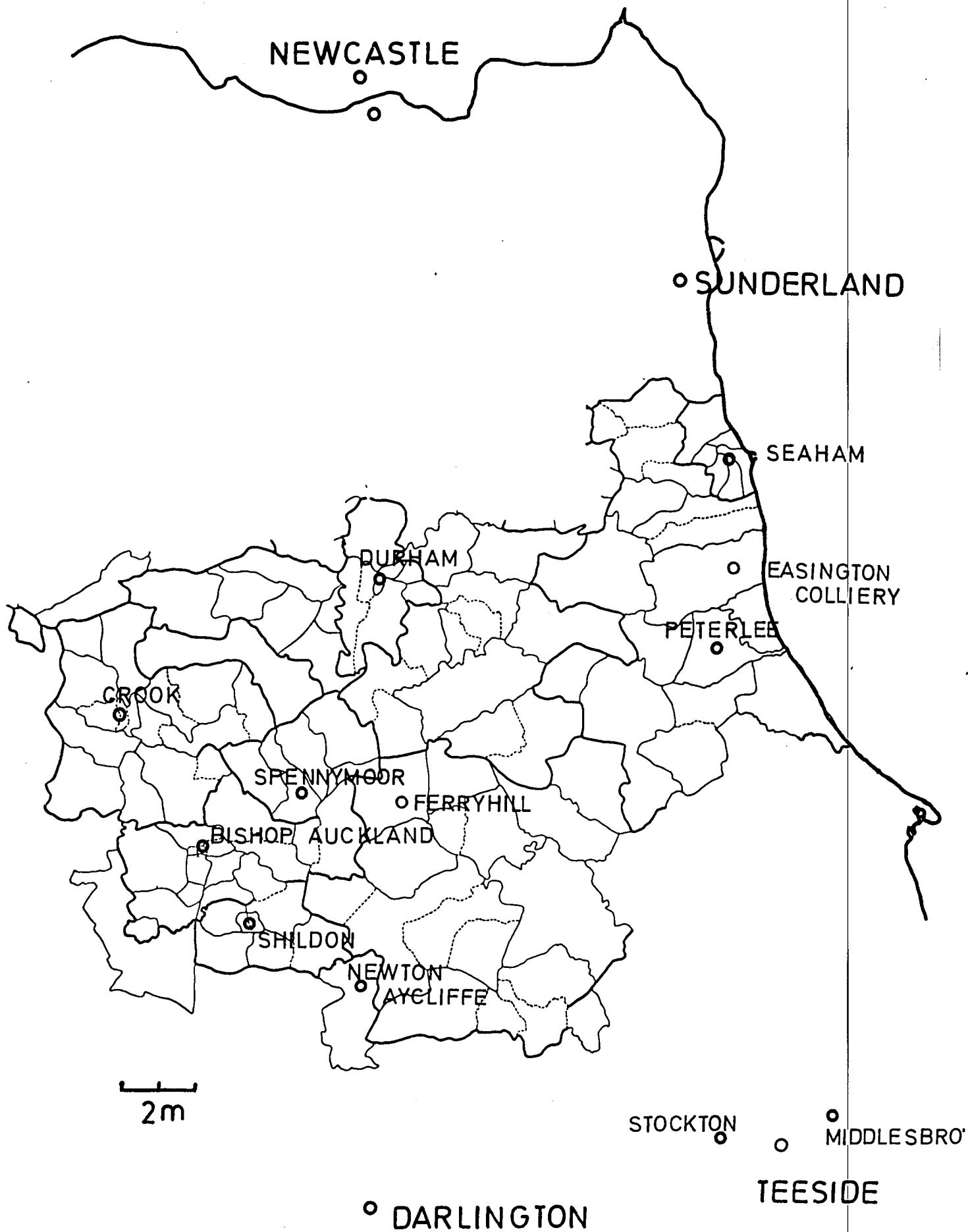


3 MILES

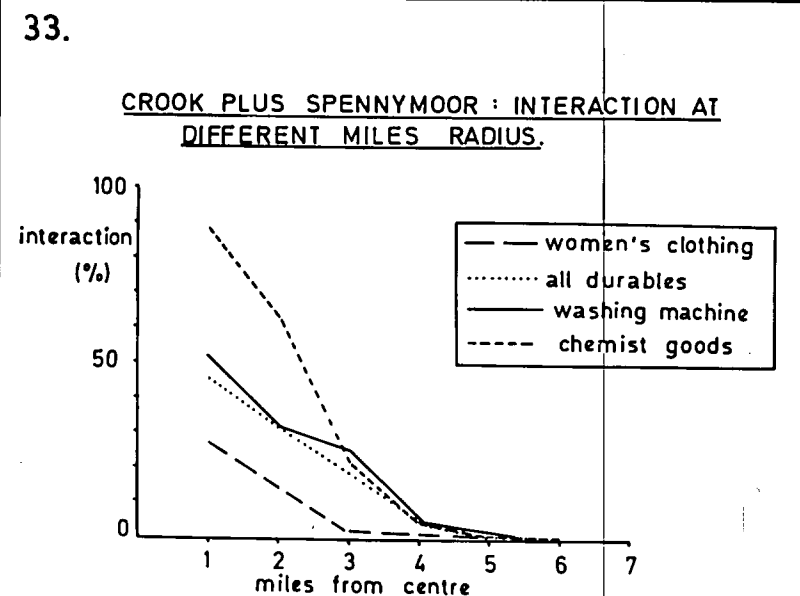
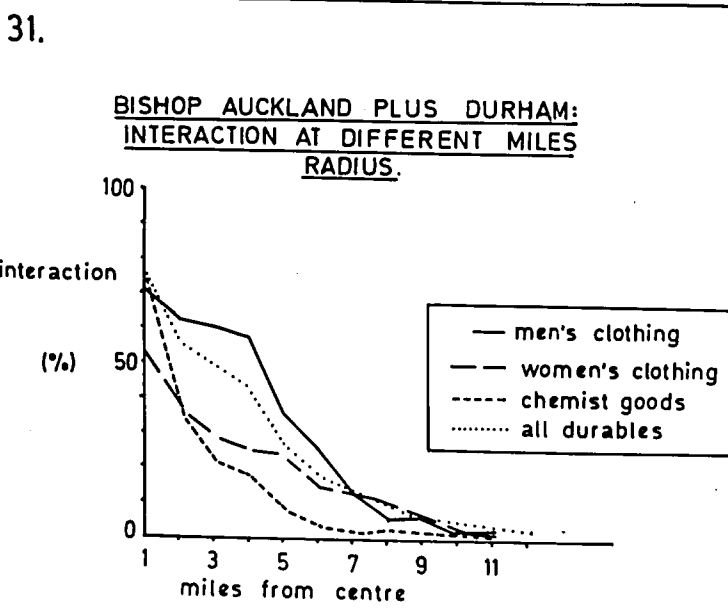
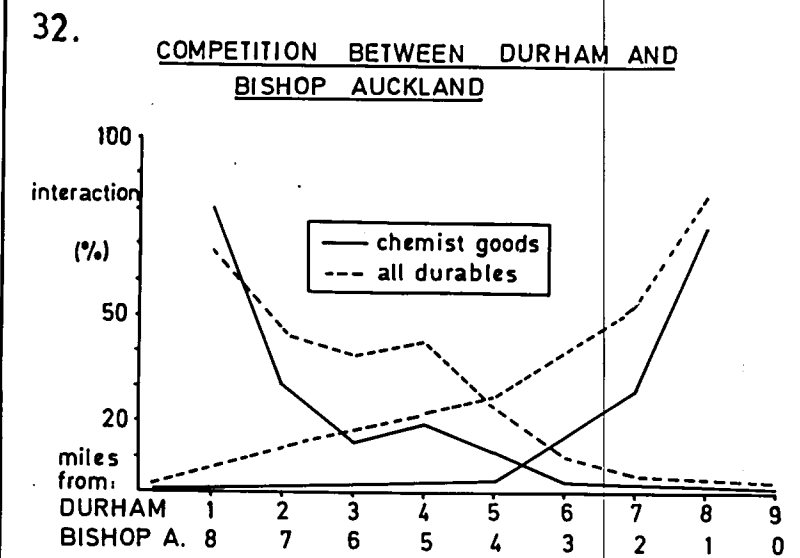
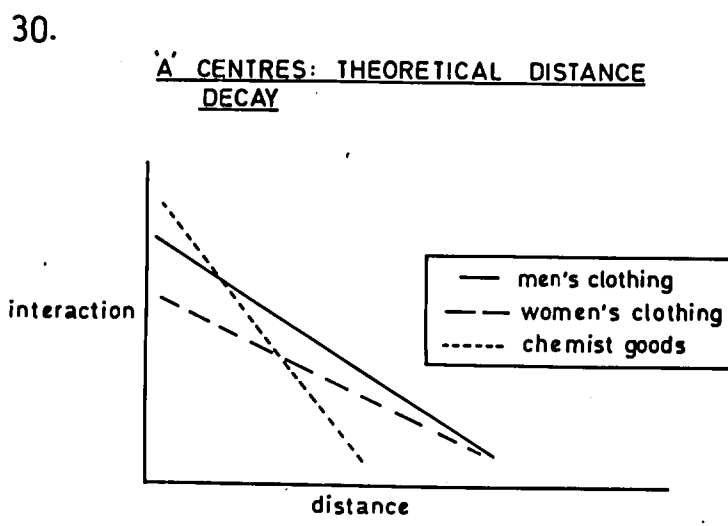
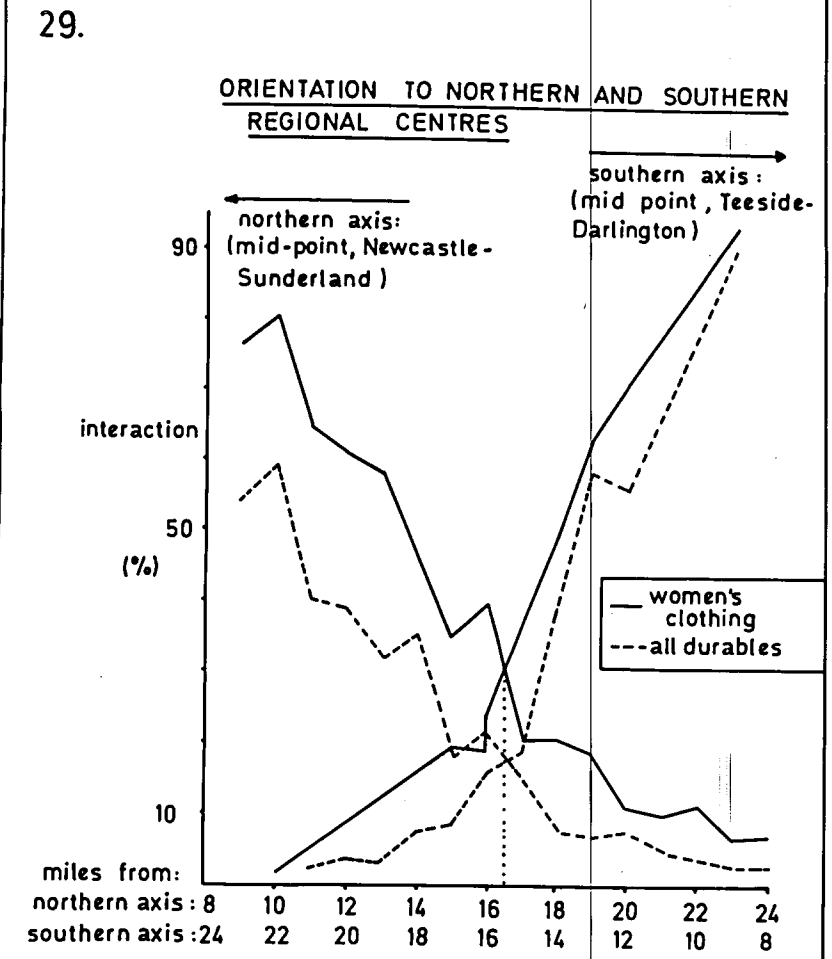
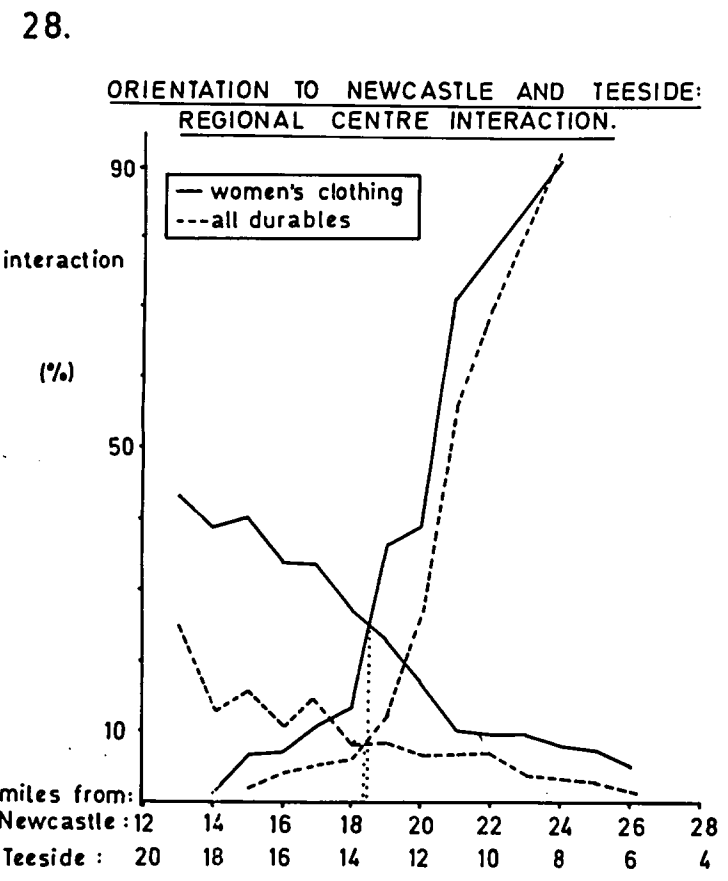
NUMBERS OF HOUSEHOLDS SERVED AT EACH HEIRARCHICAL LEVEL :
CENTRES IN SOUTH DURHAM.



REGIONAL AND A LEVEL CENTRES USED IN
TRADE AREA ANALYSIS

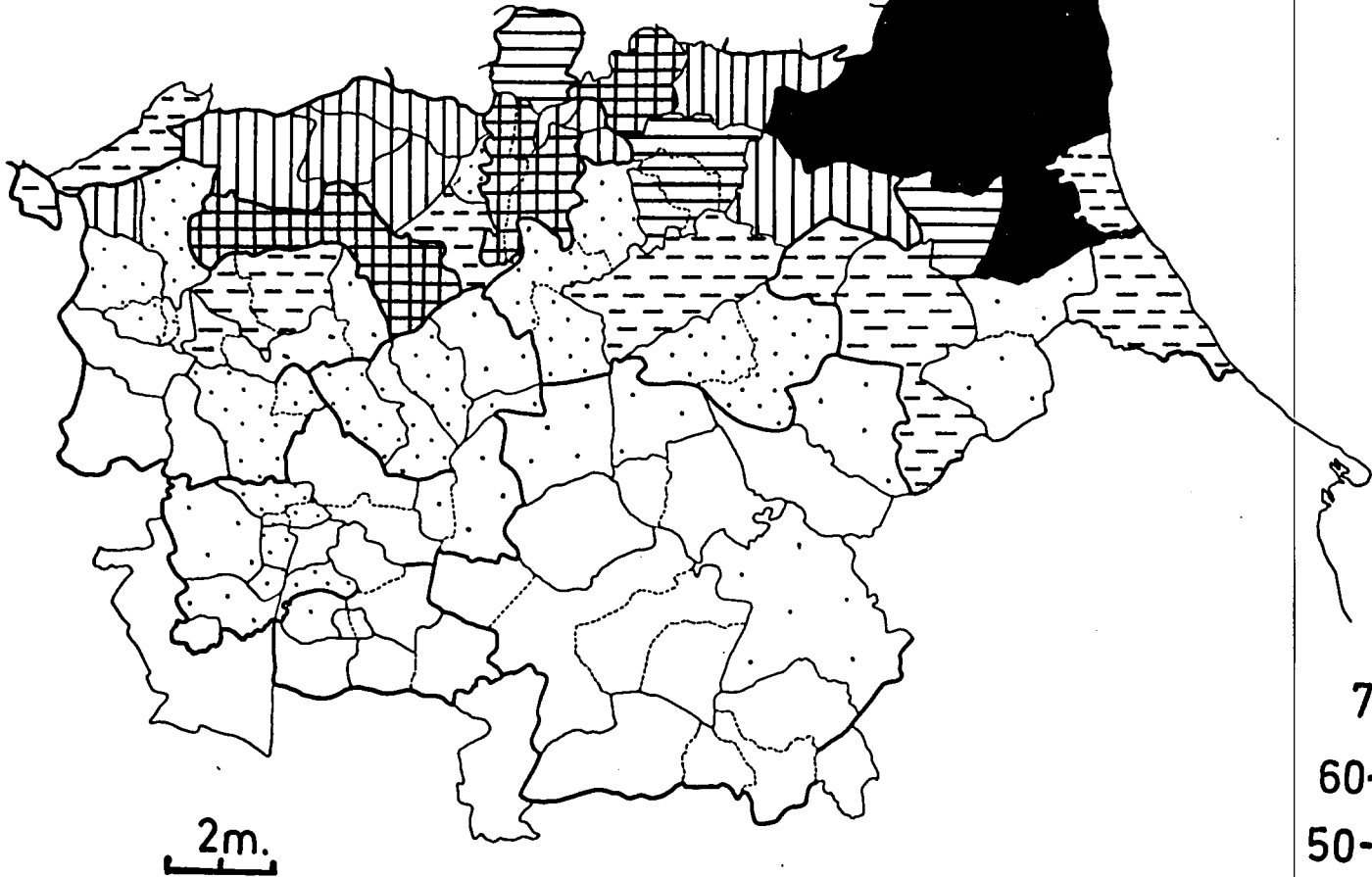


DISTANCE DECAY FUNCTIONS

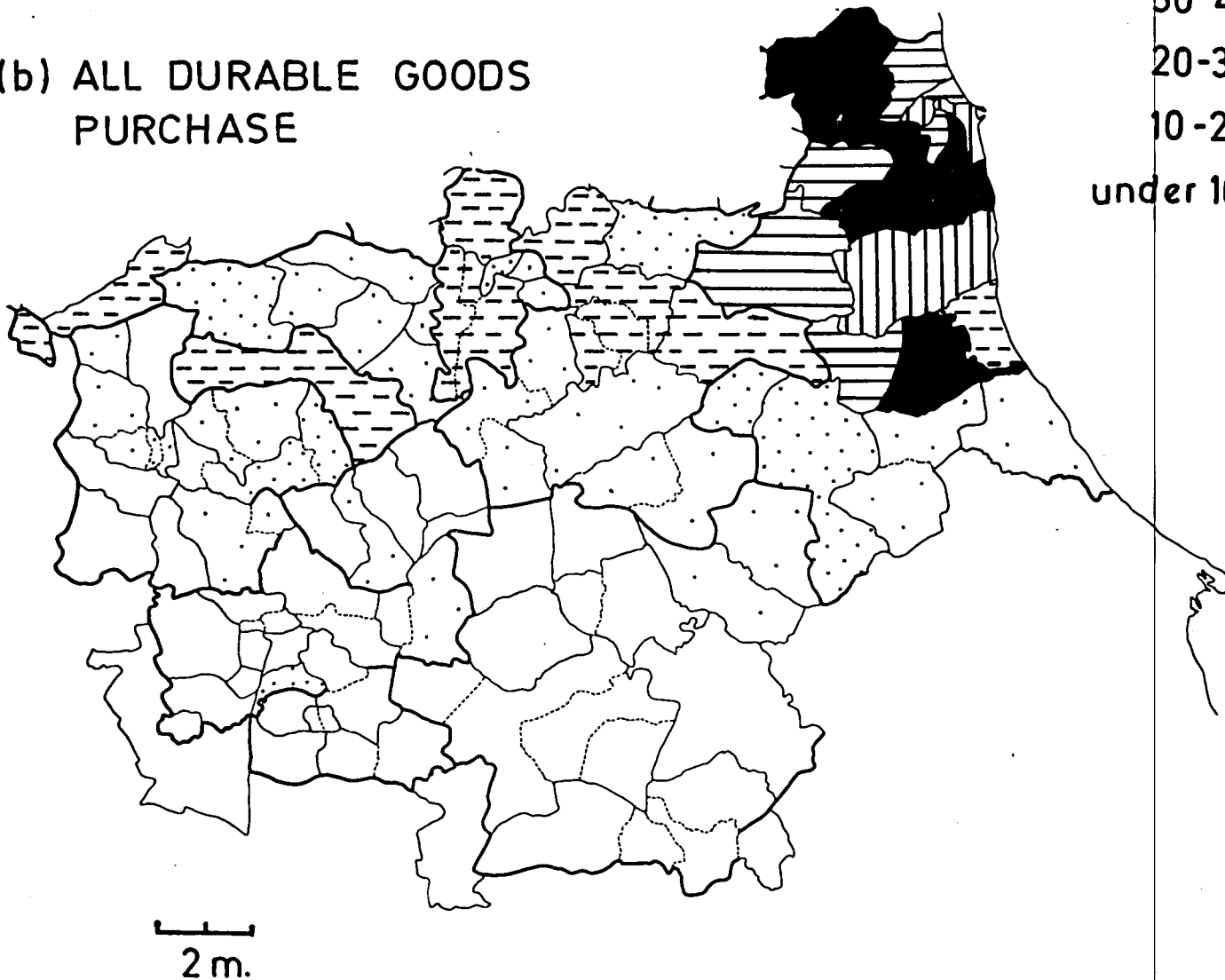


INTERACTION WITH NEWCASTLE
PLUS SUNDERLAND FOR:

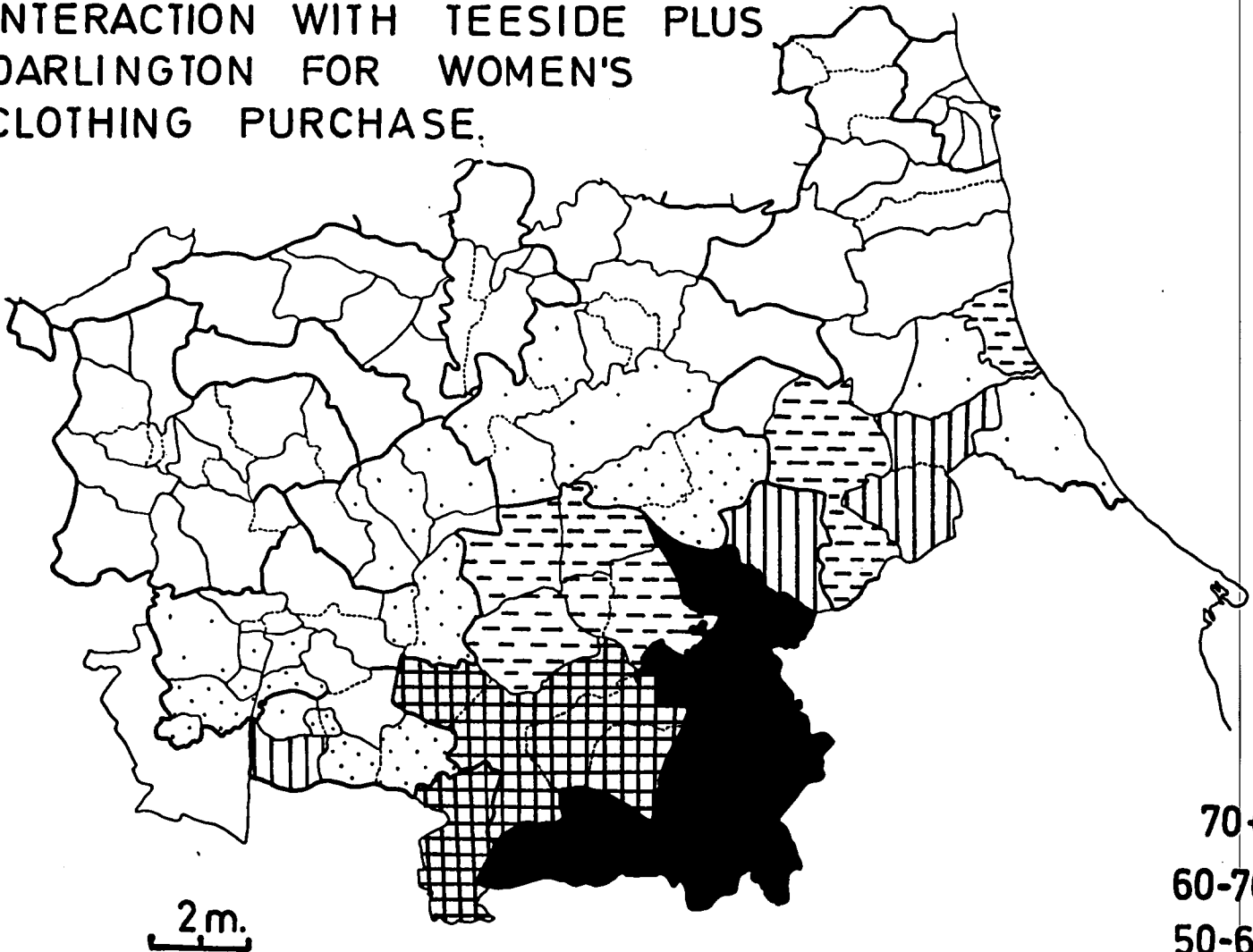
(a) WOMEN'S CLOTHING PURCHASE



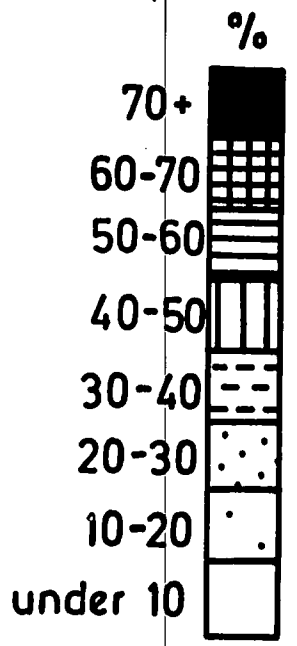
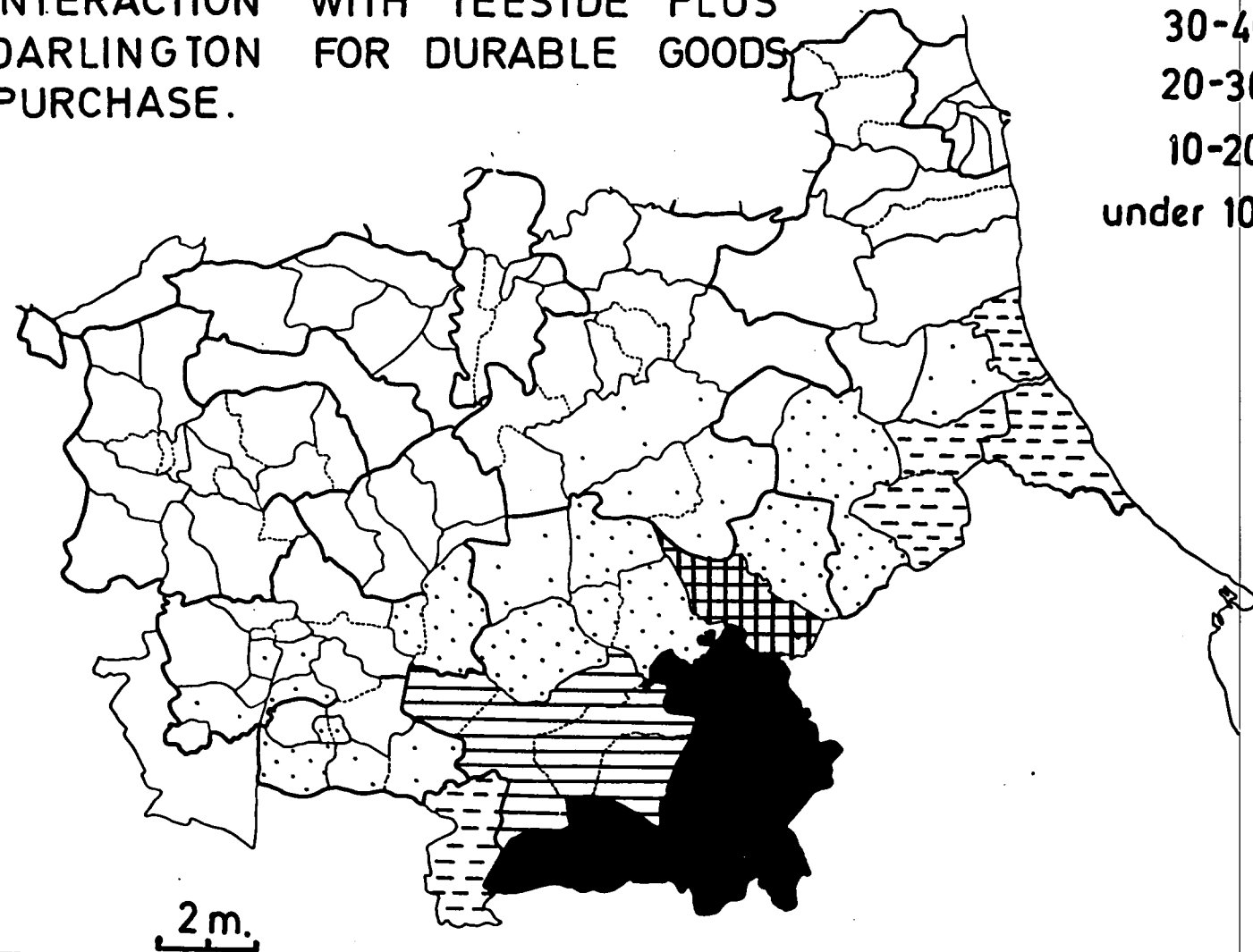
(b) ALL DURABLE GOODS
PURCHASE



INTERACTION WITH TEESIDE PLUS
DARLINGTON FOR WOMEN'S
CLOTHING PURCHASE.

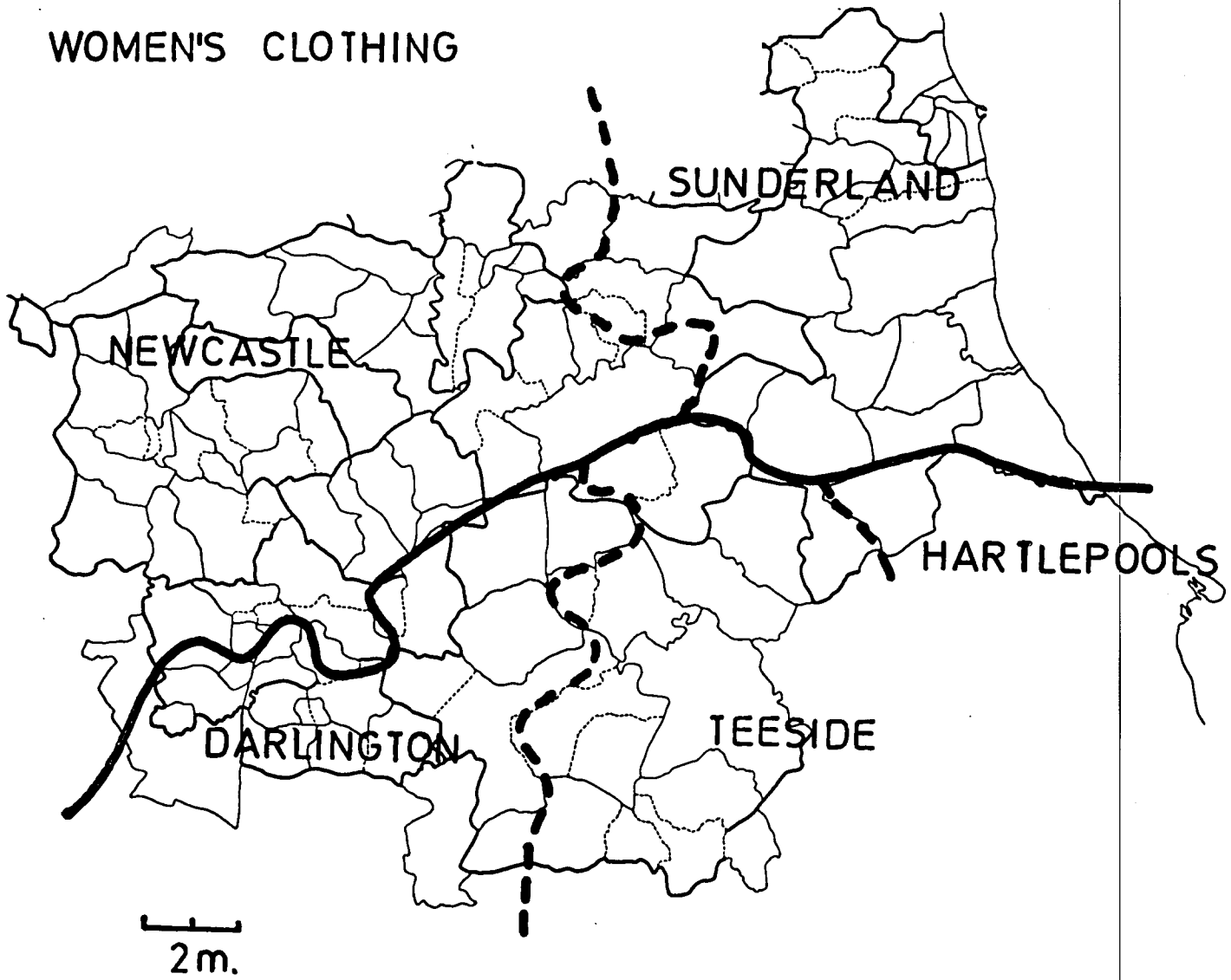


INTERACTION WITH TEESIDE PLUS
DARLINGTON FOR DURABLE GOODS
PURCHASE.

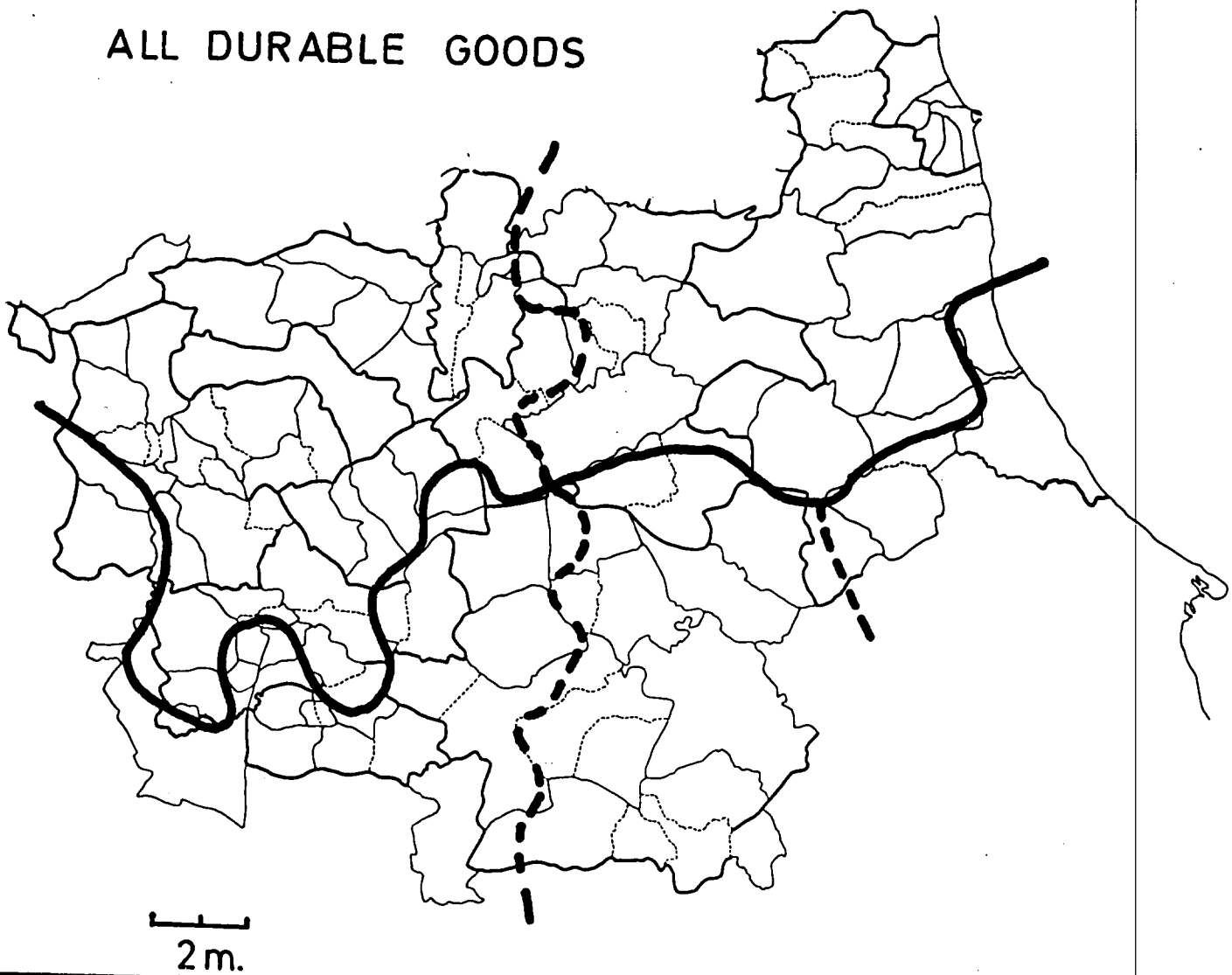


REGIONAL CENTRE UMLANDS :

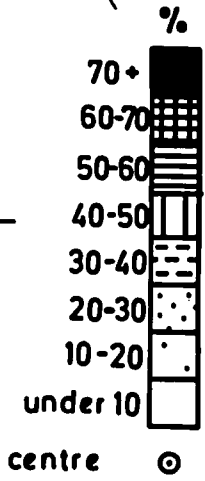
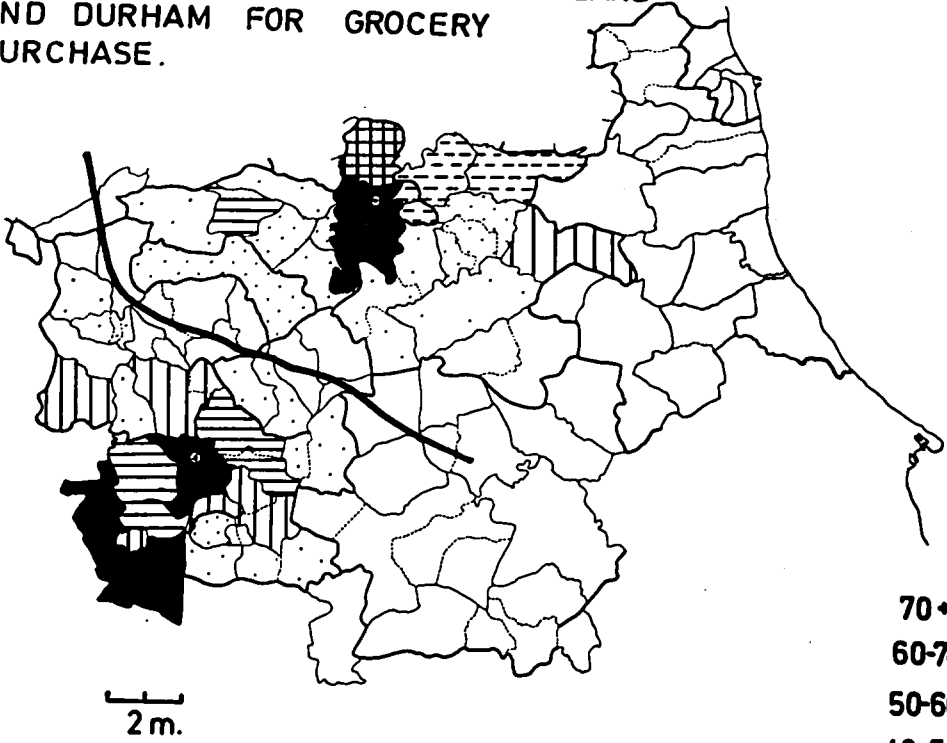
WOMEN'S CLOTHING



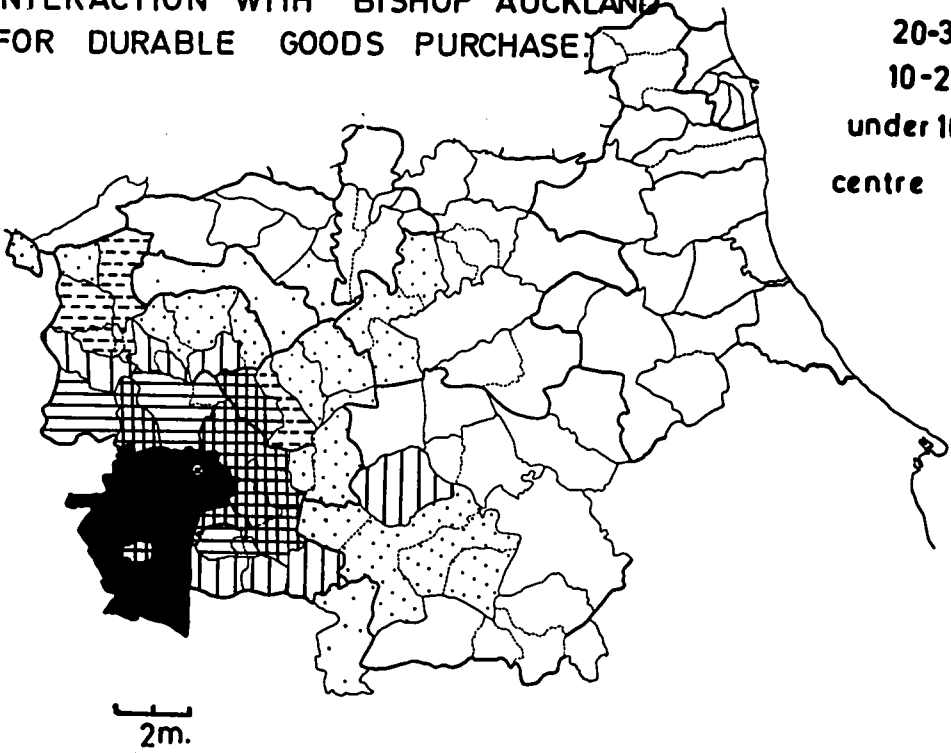
ALL DURABLE GOODS



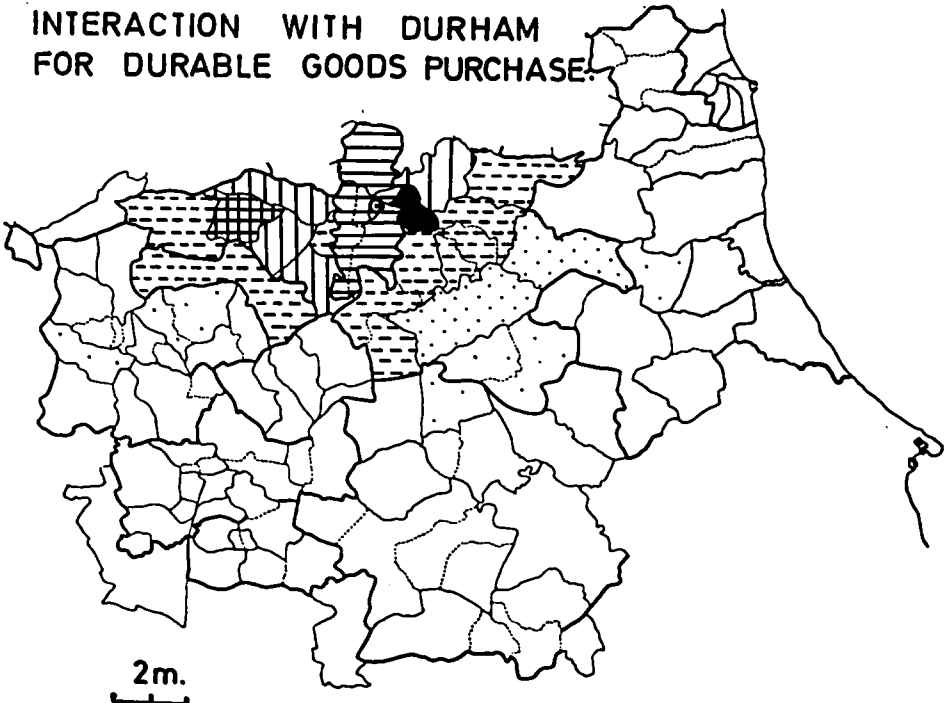
INTERACTION WITH BISHOP AUCKLAND AND DURHAM FOR GROCERY PURCHASE.



INTERACTION WITH BISHOP AUCKLAND FOR DURABLE GOODS PURCHASE.

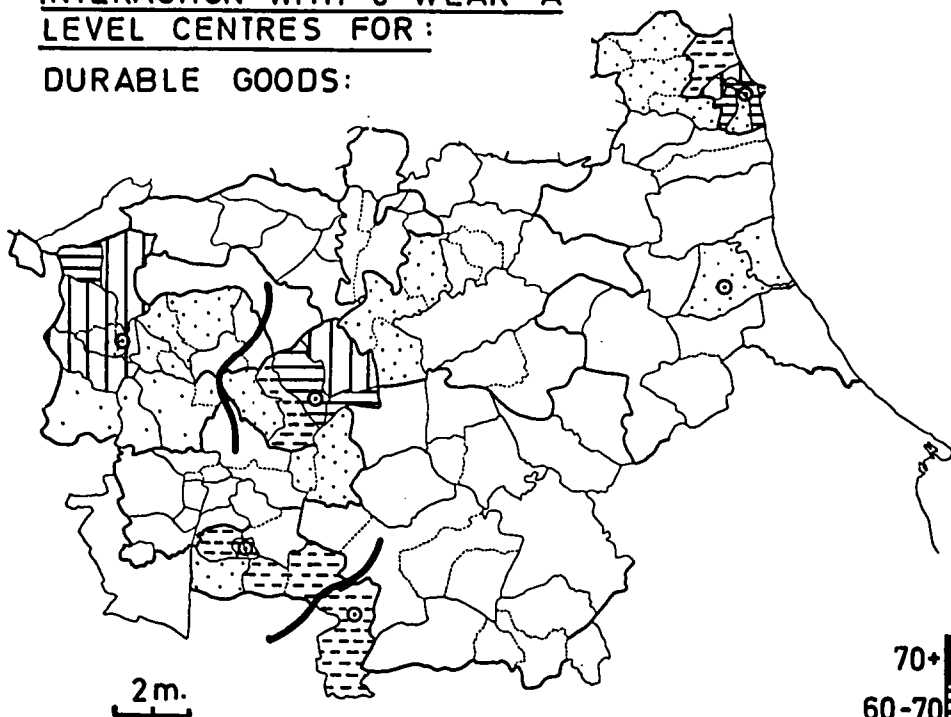


INTERACTION WITH DURHAM FOR DURABLE GOODS PURCHASE.

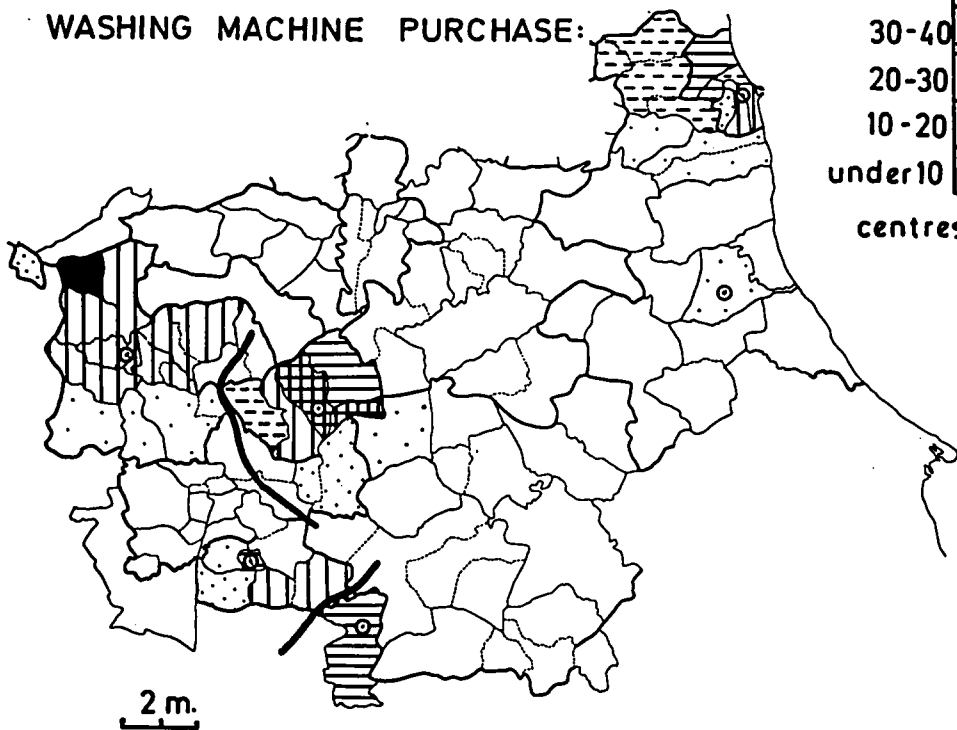


**INTERACTION WITH 6 WEAK 'A'
LEVEL CENTRES FOR:**

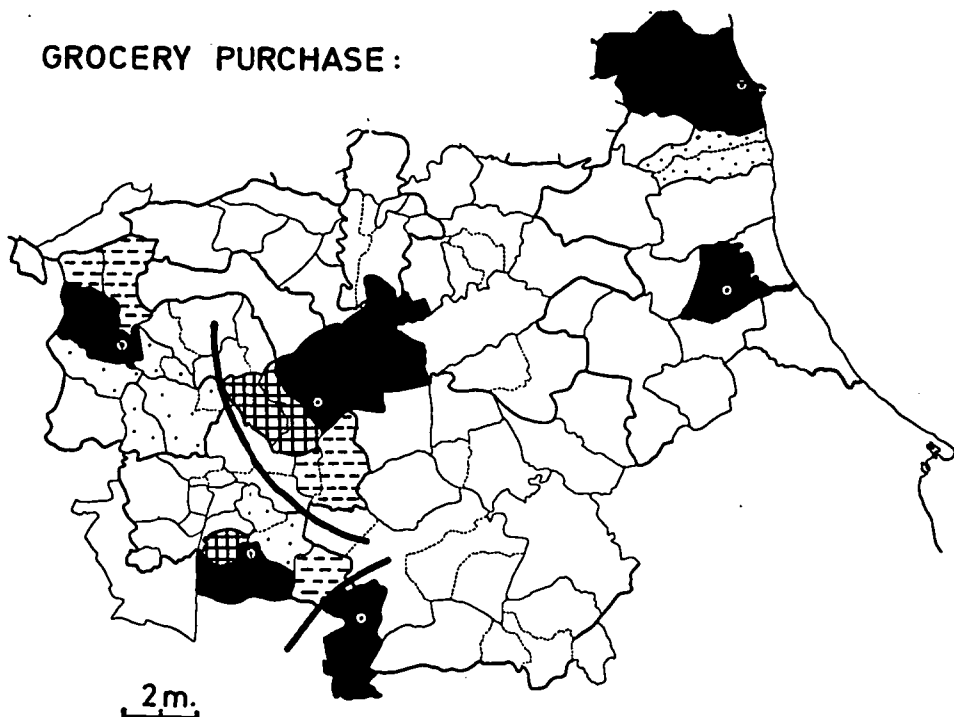
DURABLE GOODS:



WASHING MACHINE PURCHASE:

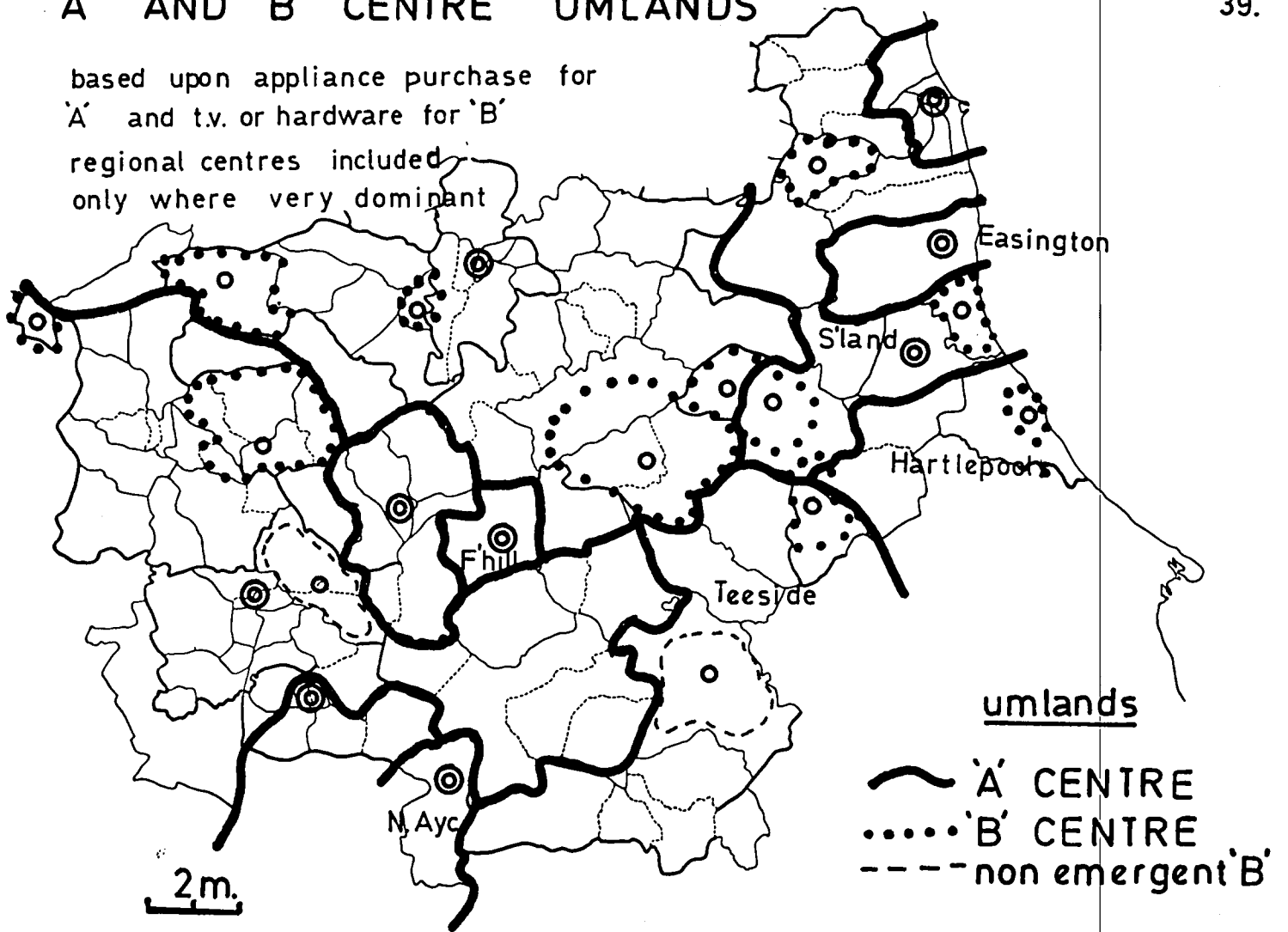


GROCERY PURCHASE:

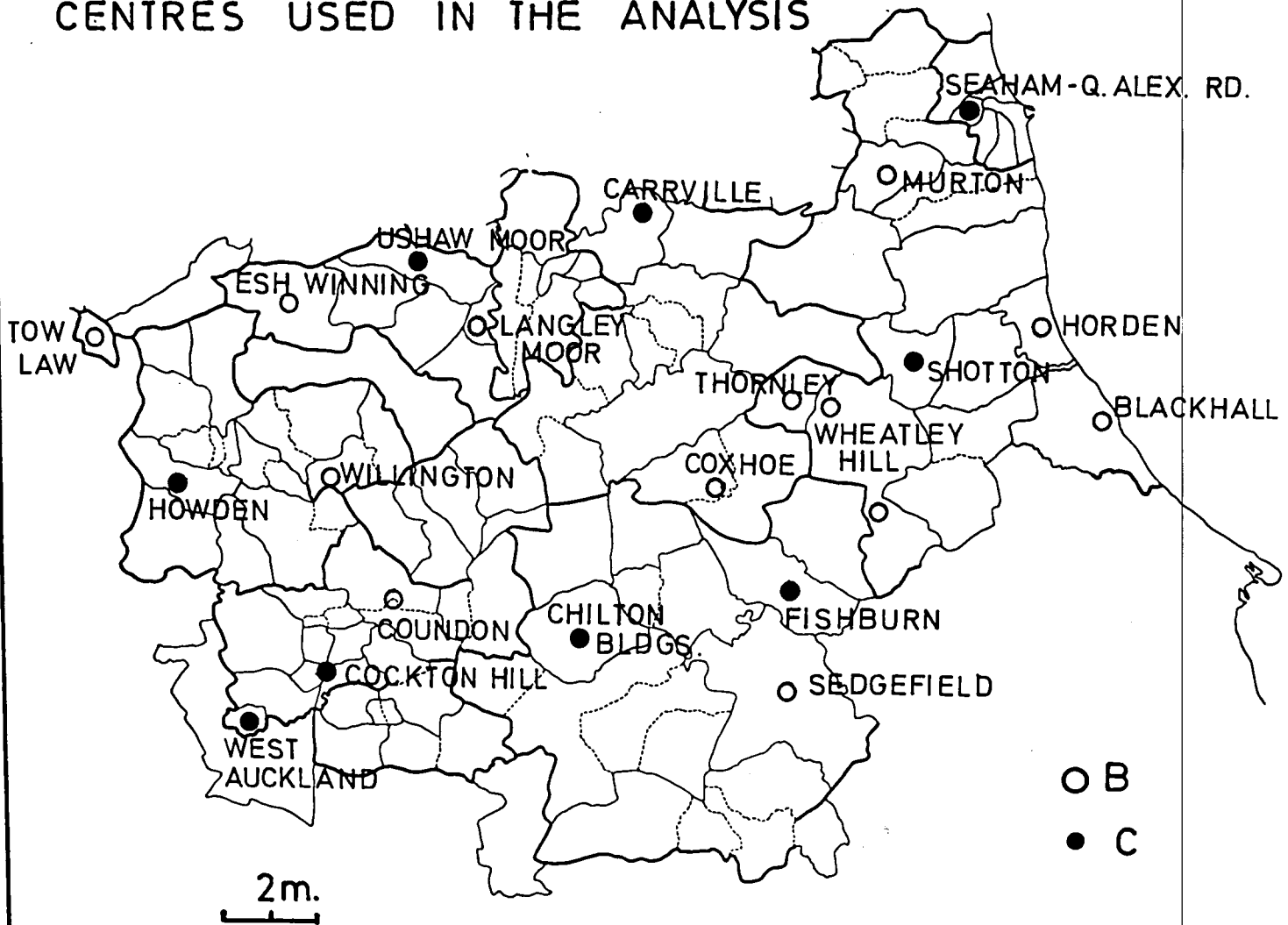


'A' AND 'B' CENTRE UMLANDS

based upon appliance purchase for 'A' and t.v. or hardware for 'B'
 regional centres included only where very dominant

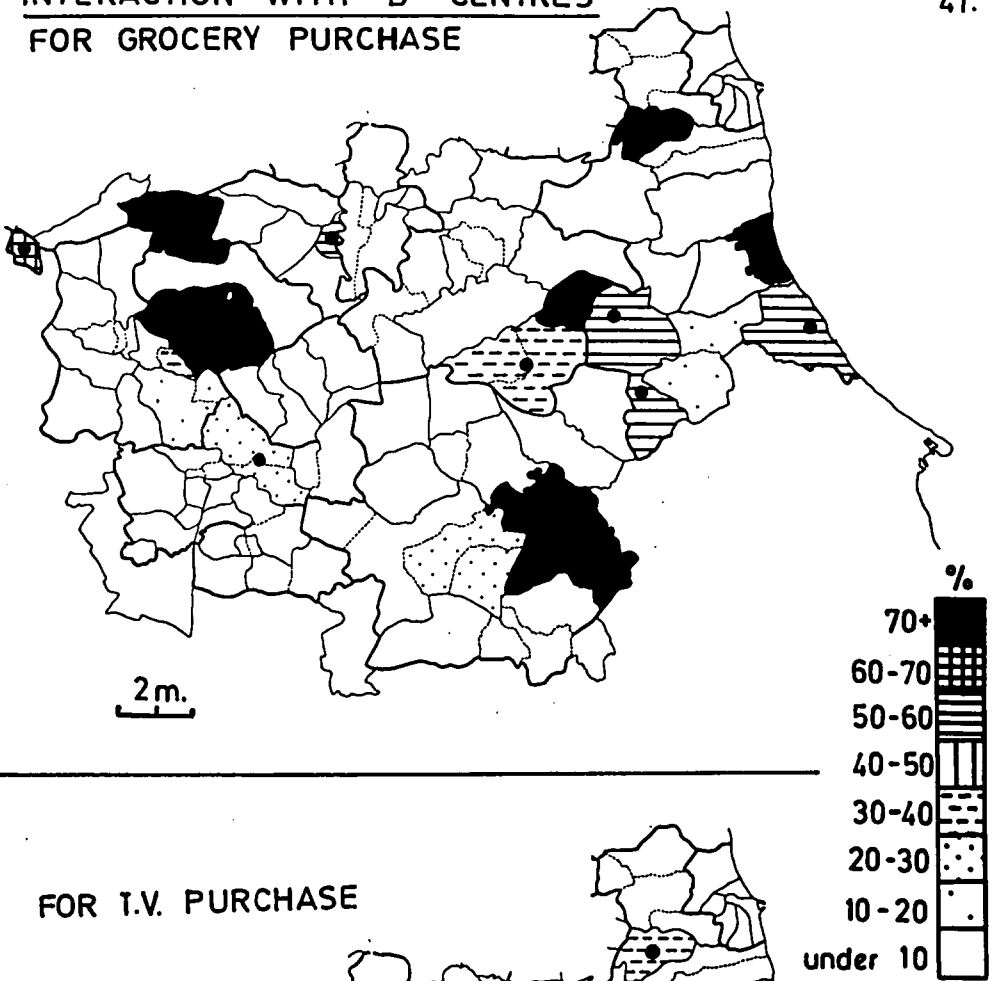


'B' CENTRES AND CHOSEN 'C' CENTRES USED IN THE ANALYSIS

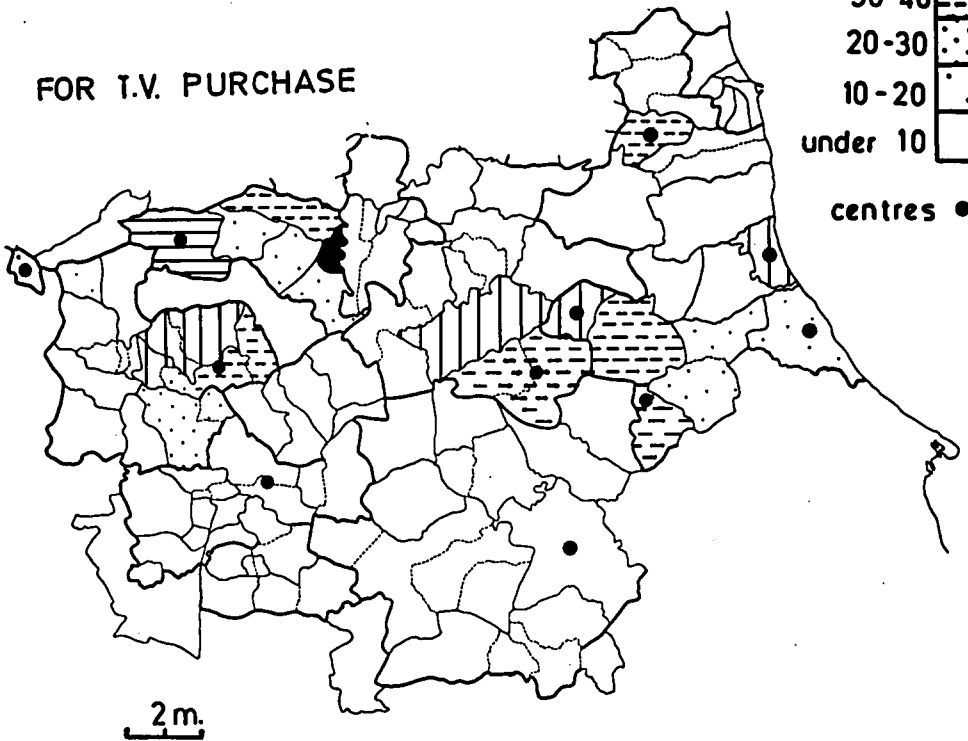


**INTERACTION WITH 'B' CENTRES
FOR GROCERY PURCHASE**

41.

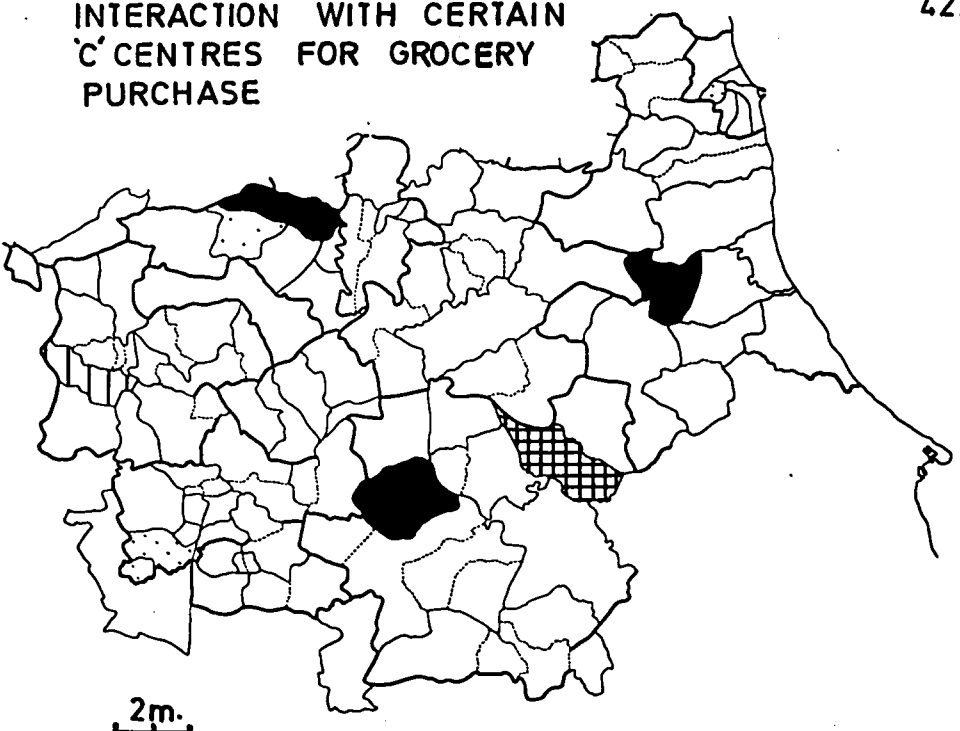


FOR T.V. PURCHASE



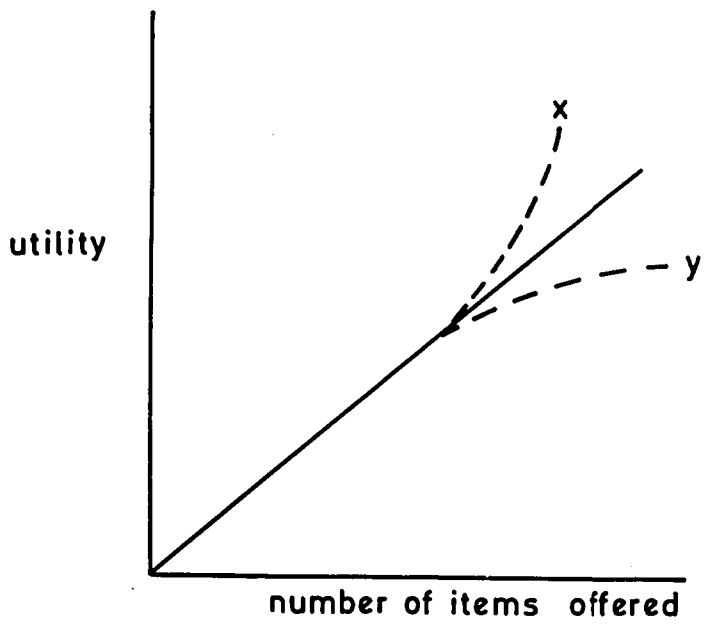
**INTERACTION WITH CERTAIN
'C' CENTRES FOR GROCERY
PURCHASE**

42.

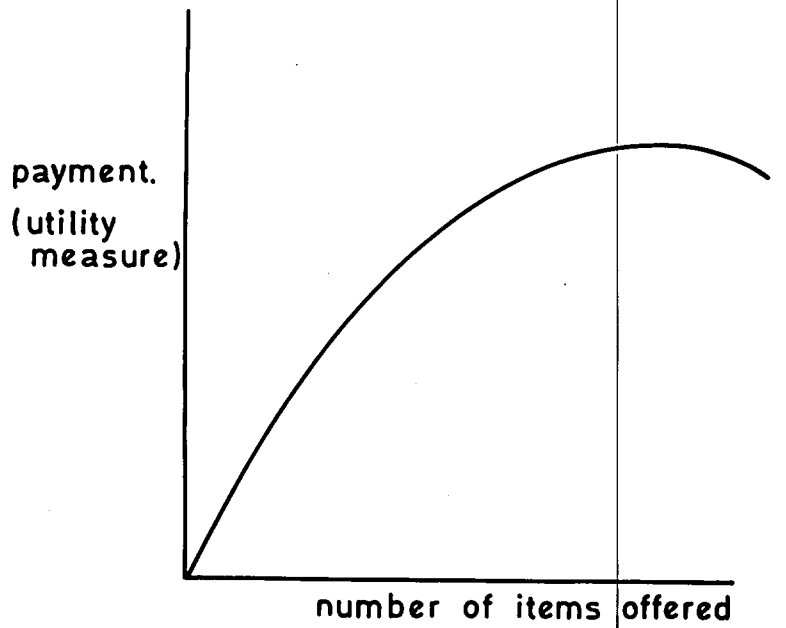


CONSUMER BEHAVIOUR: THEORETICAL ASPECTS.

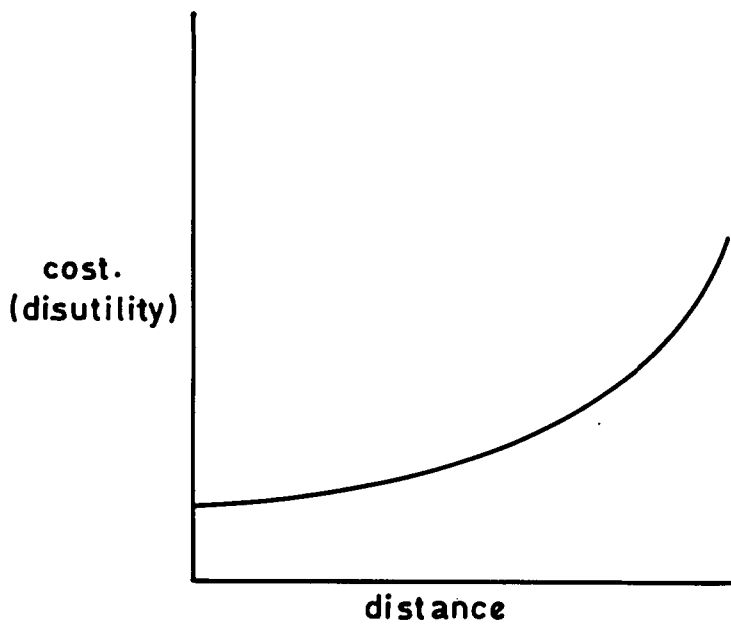
43.



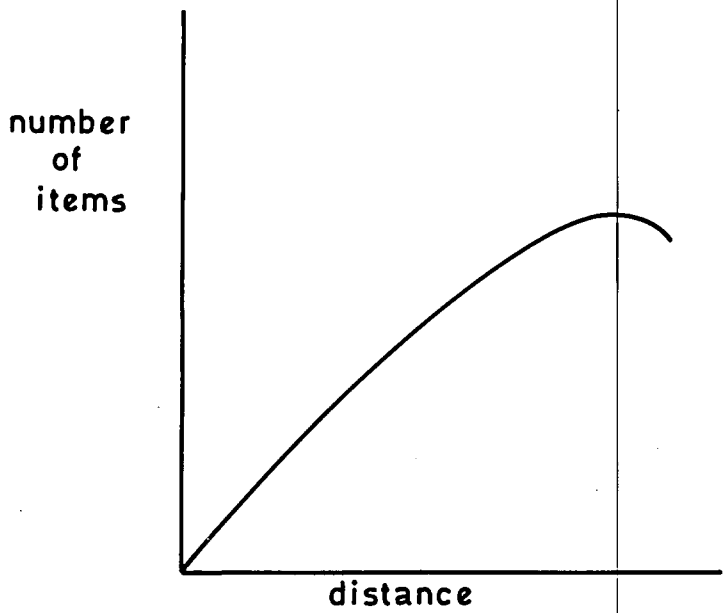
44.



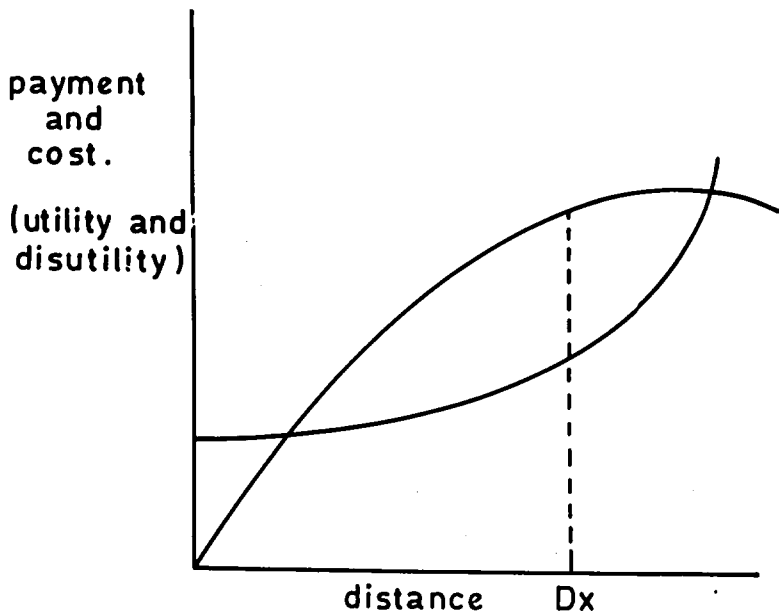
45.



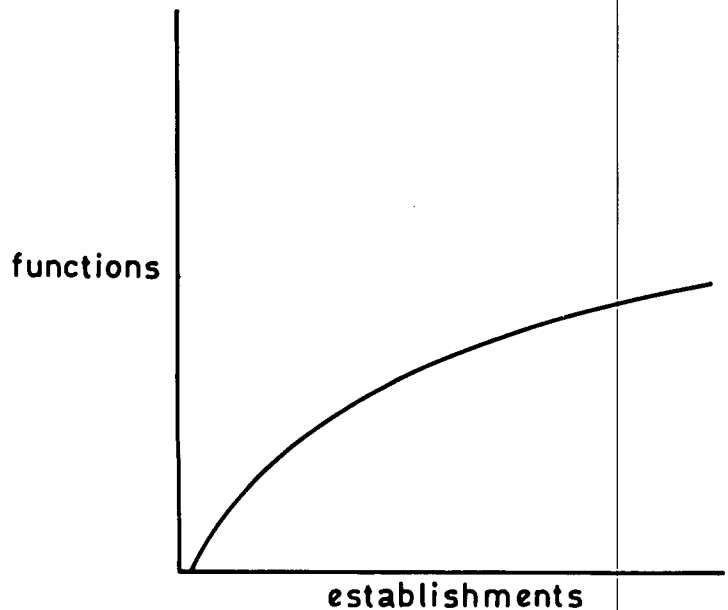
46.



47.

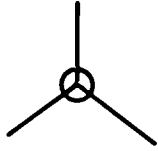


48.

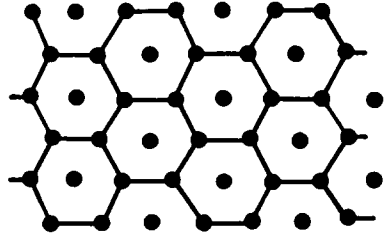


ASPECTS OF CENTRAL PLACE THEORY: REFORMULATIONS.

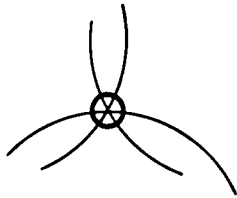
(ii)



(i)



(iii)



(iv) A CENTRAL PLACE SYSTEM BASED ON CIRCLES

heirarchical levels of centre

lowest — •

middle — ●

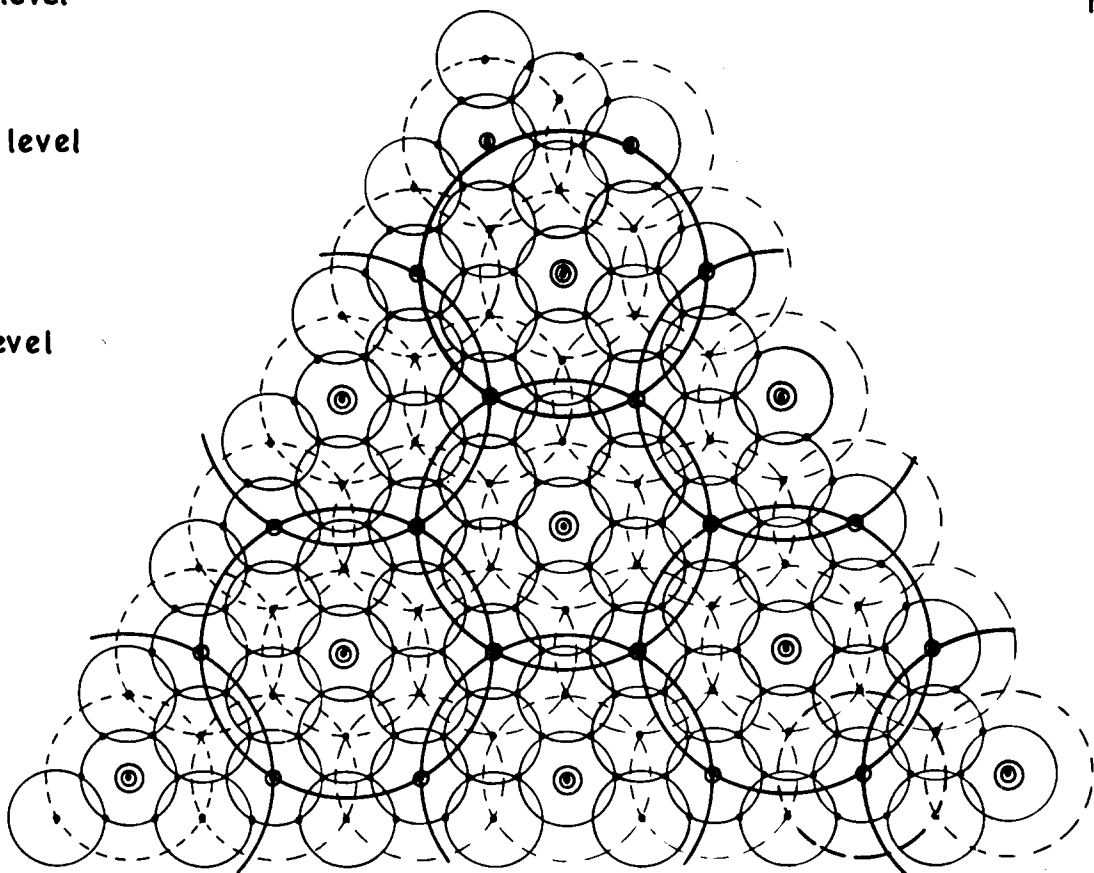
highest — ⊙

trade areas

○ lowest level

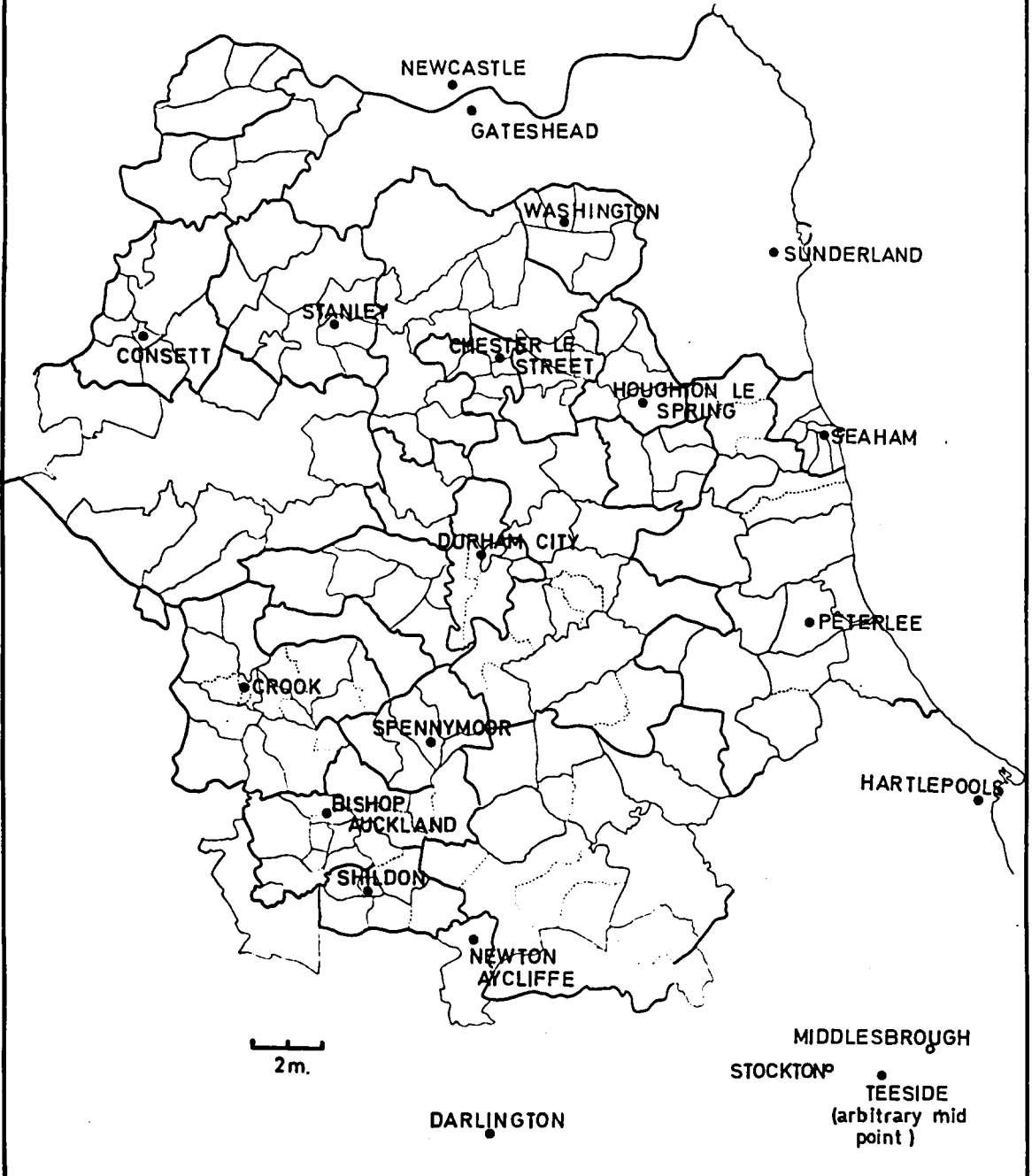
⋯ middle level

⌋ highest level



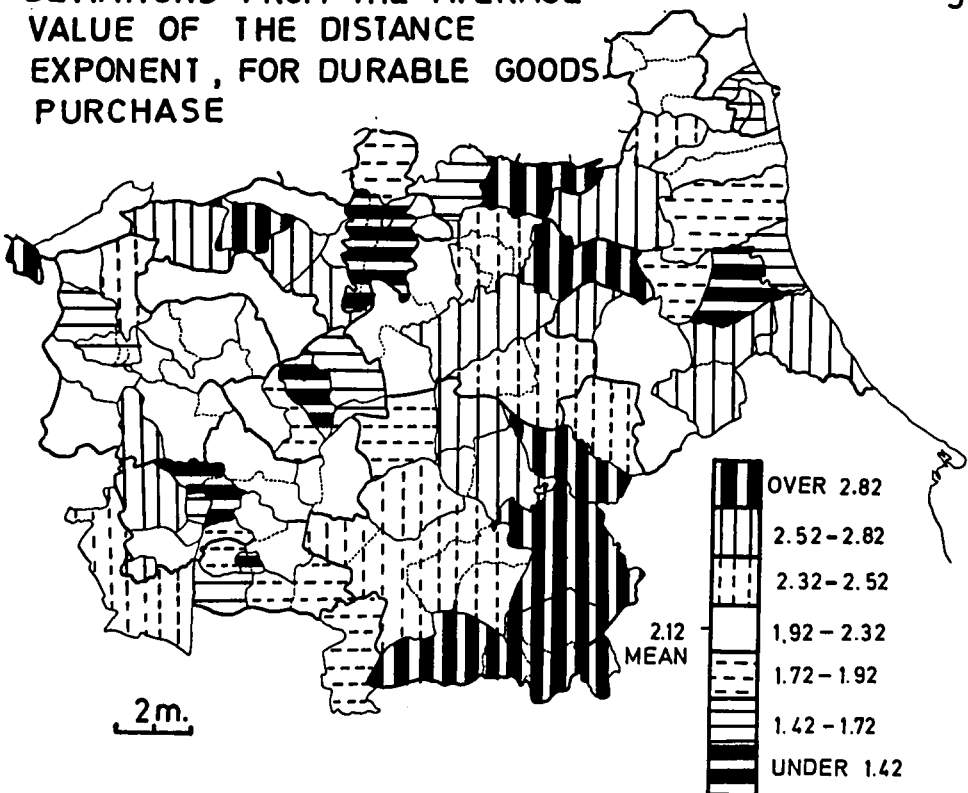
19 CENTRES USED IN THE GRAVITY MODEL ANALYSIS.

50.

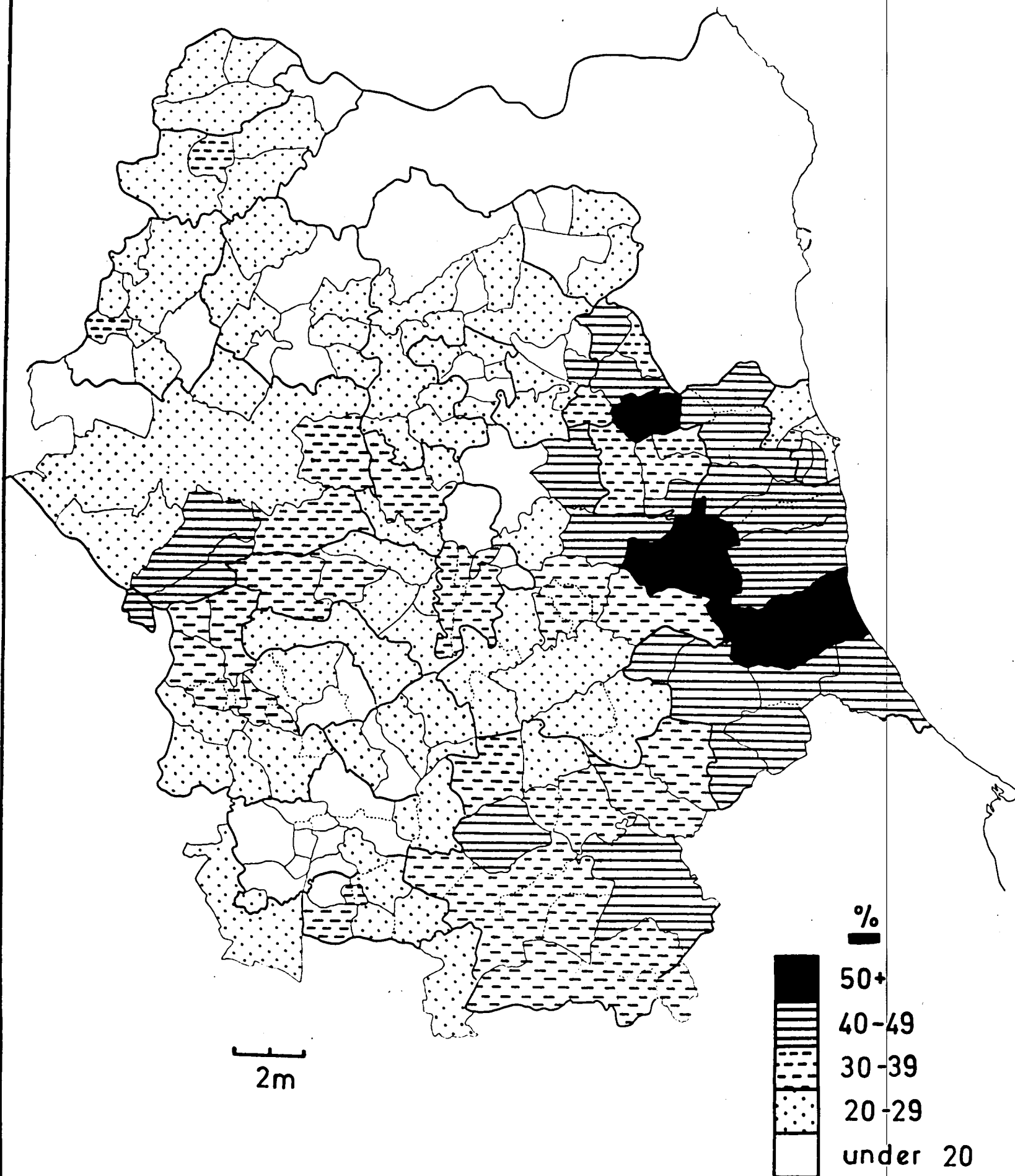


DEVIATIONS FROM THE AVERAGE VALUE OF THE DISTANCE EXPONENT, FOR DURABLE GOODS PURCHASE

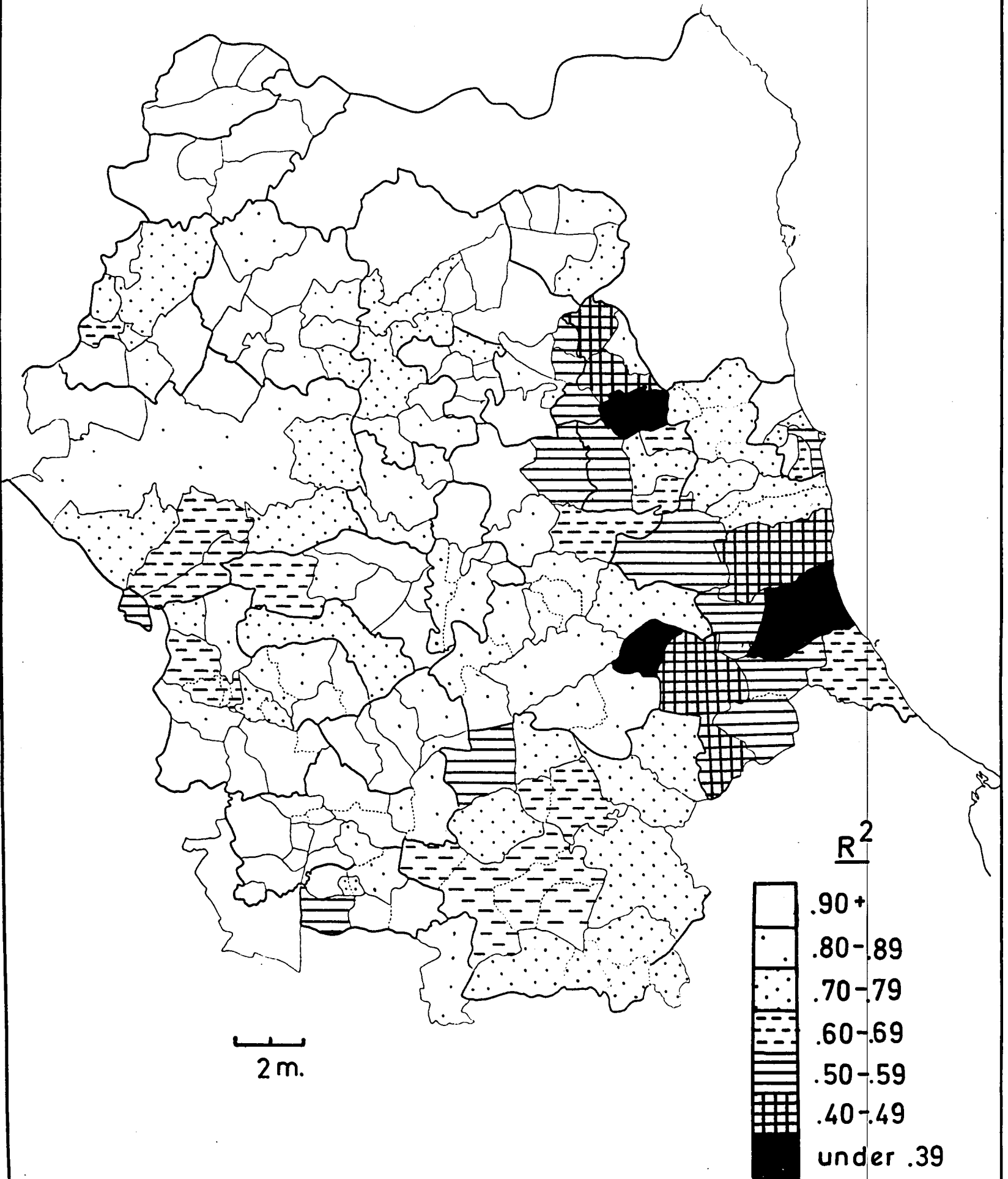
51.



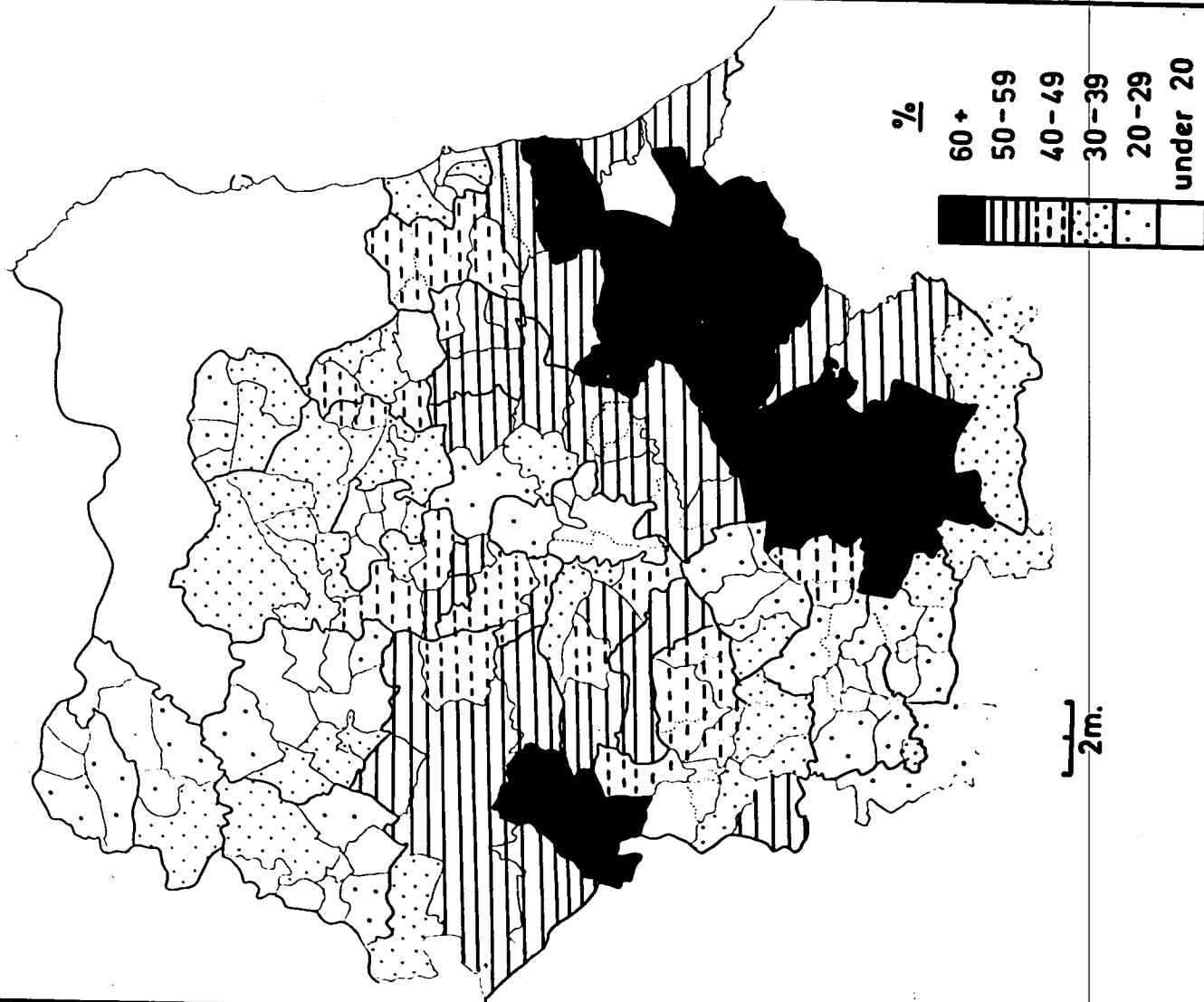
GRAVITY MODEL PREDICTION: ABSOLUTE
ERRORS. ONE PARAMETER MODEL.
ALL DURABLES.



GRAVITY MODEL PREDICTION: R^2 VALUES.
ONE PARAMETER MODEL.
ALL DURABLES.

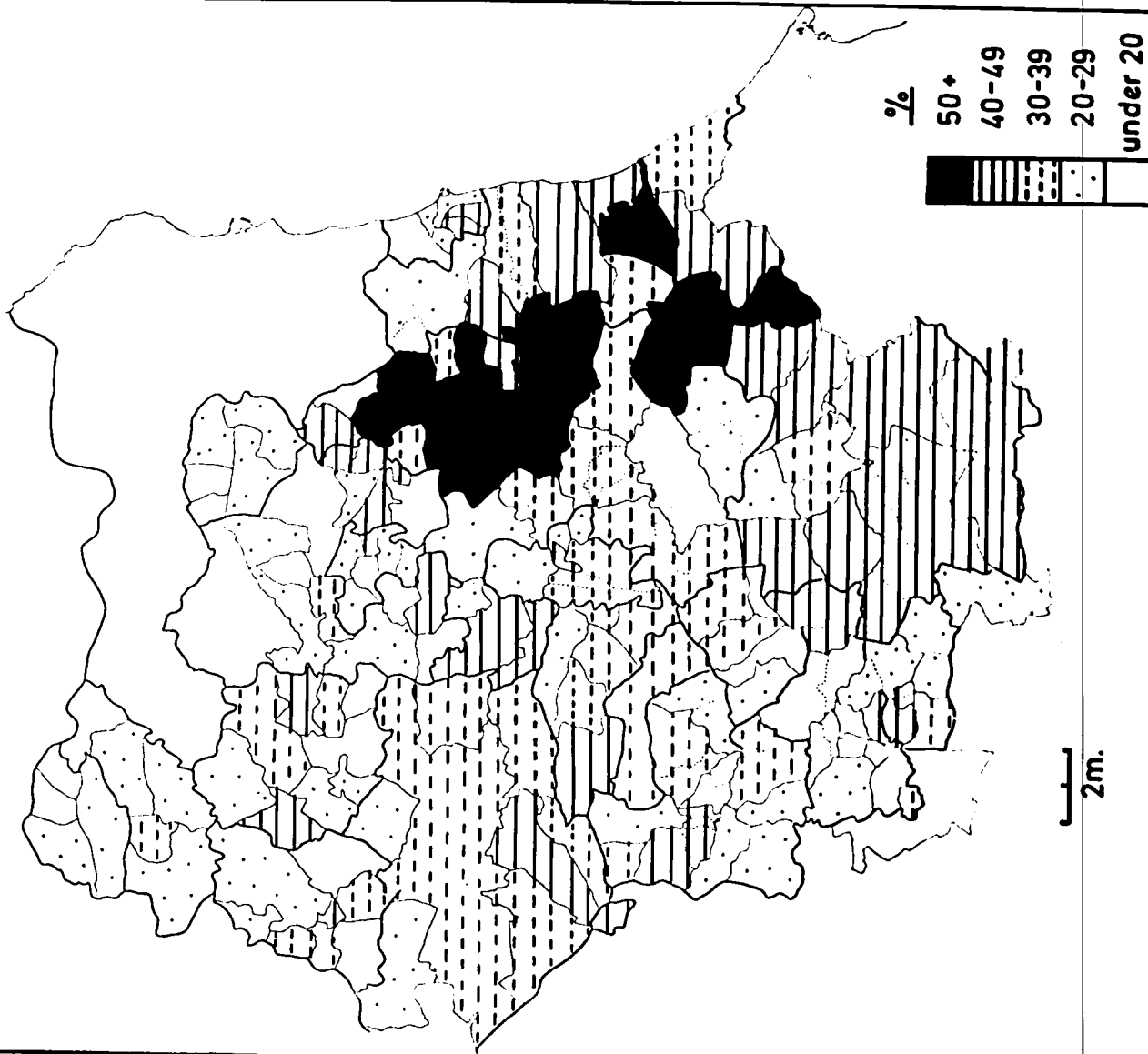


54. RESIDUAL COMPETITION: ALL DURABLES.

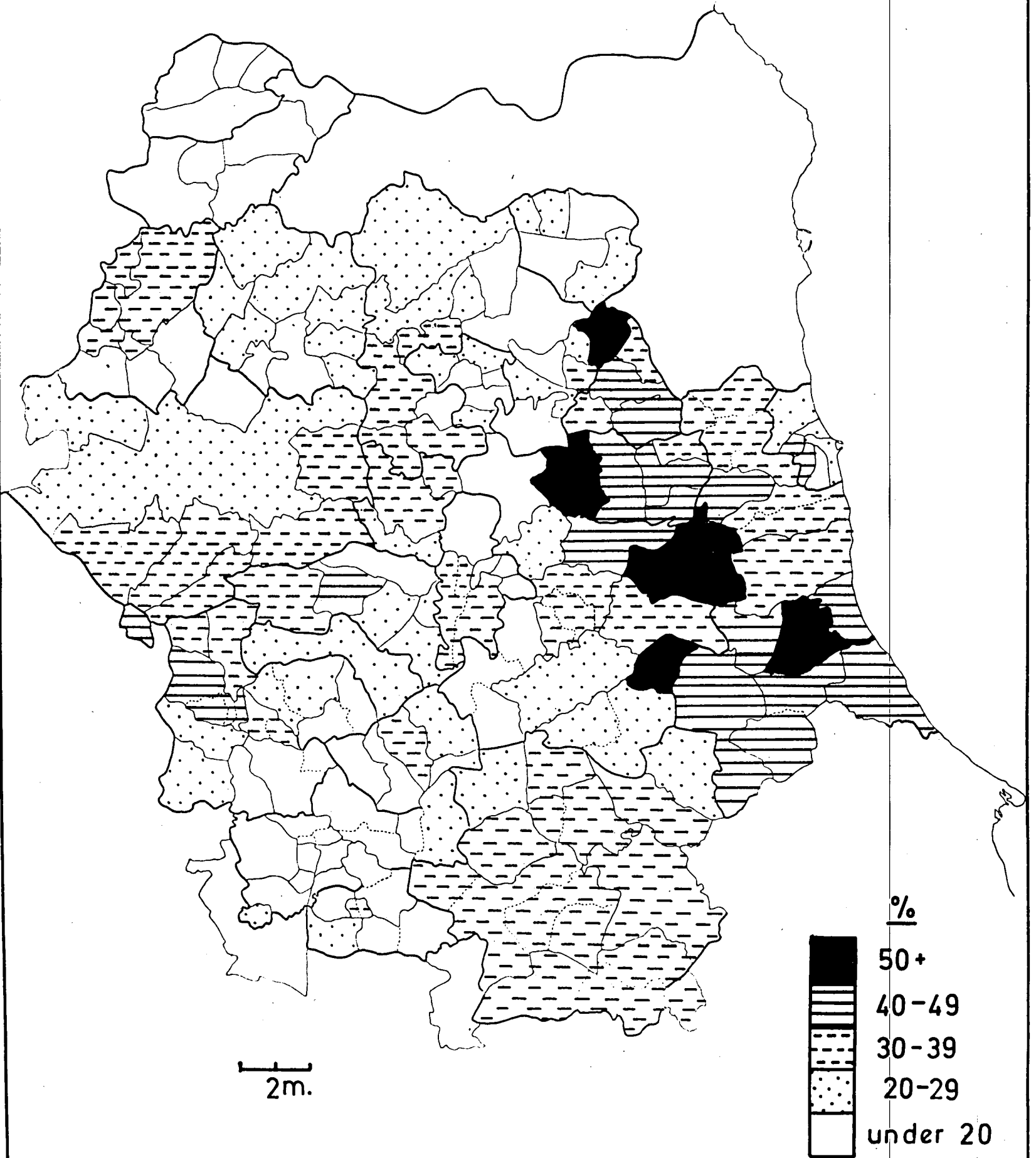


55.

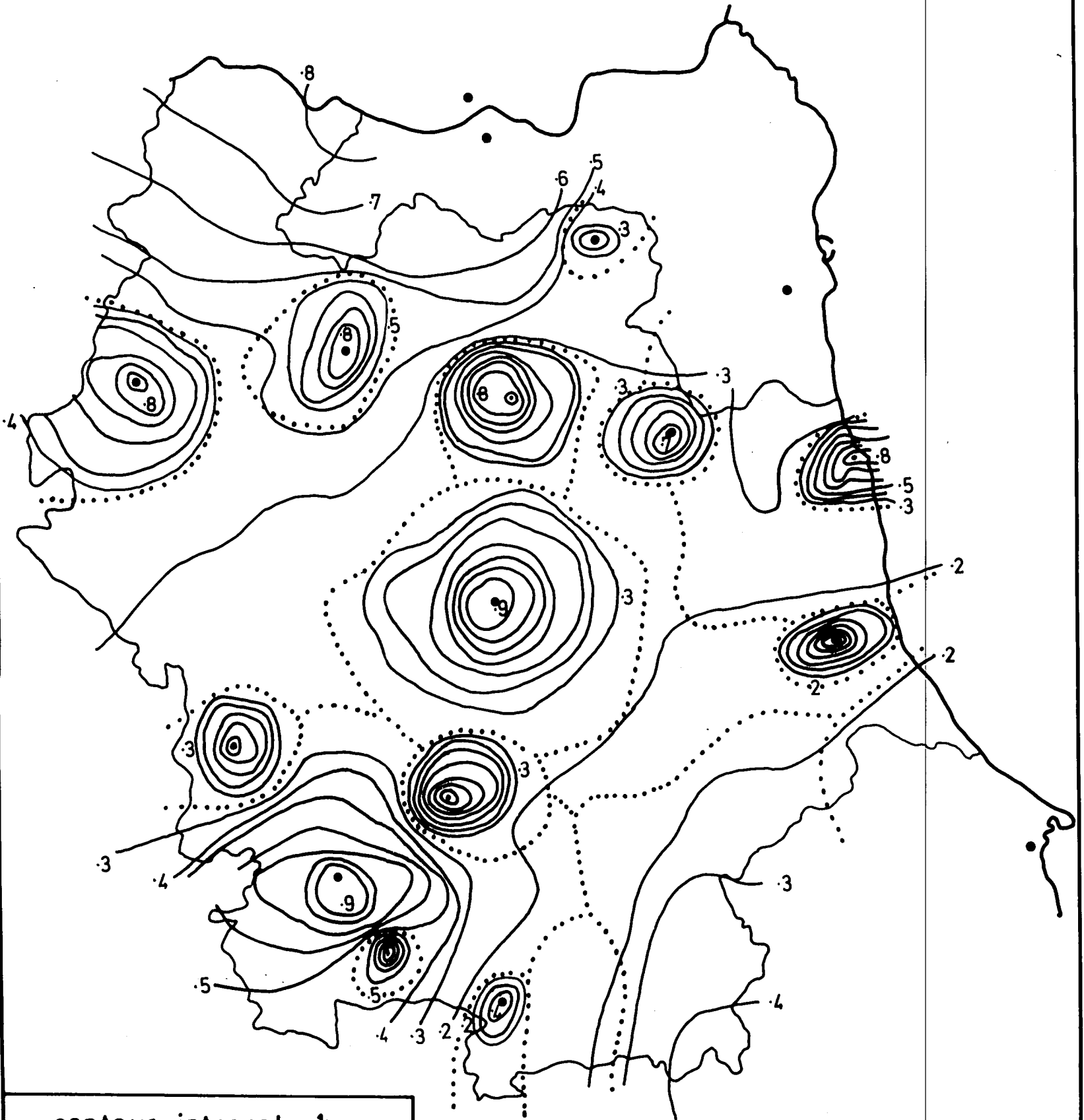
GRAVITY MODEL PREDICTION: ABSOLUTE ERRORS. ONE PARAMETER MODEL. FURNITURE PURCHASE.



GRAVITY MODEL PREDICTION: ABSOLUTE
ERRORS. TWO PARAMETER MODEL.
ALL DURABLES.



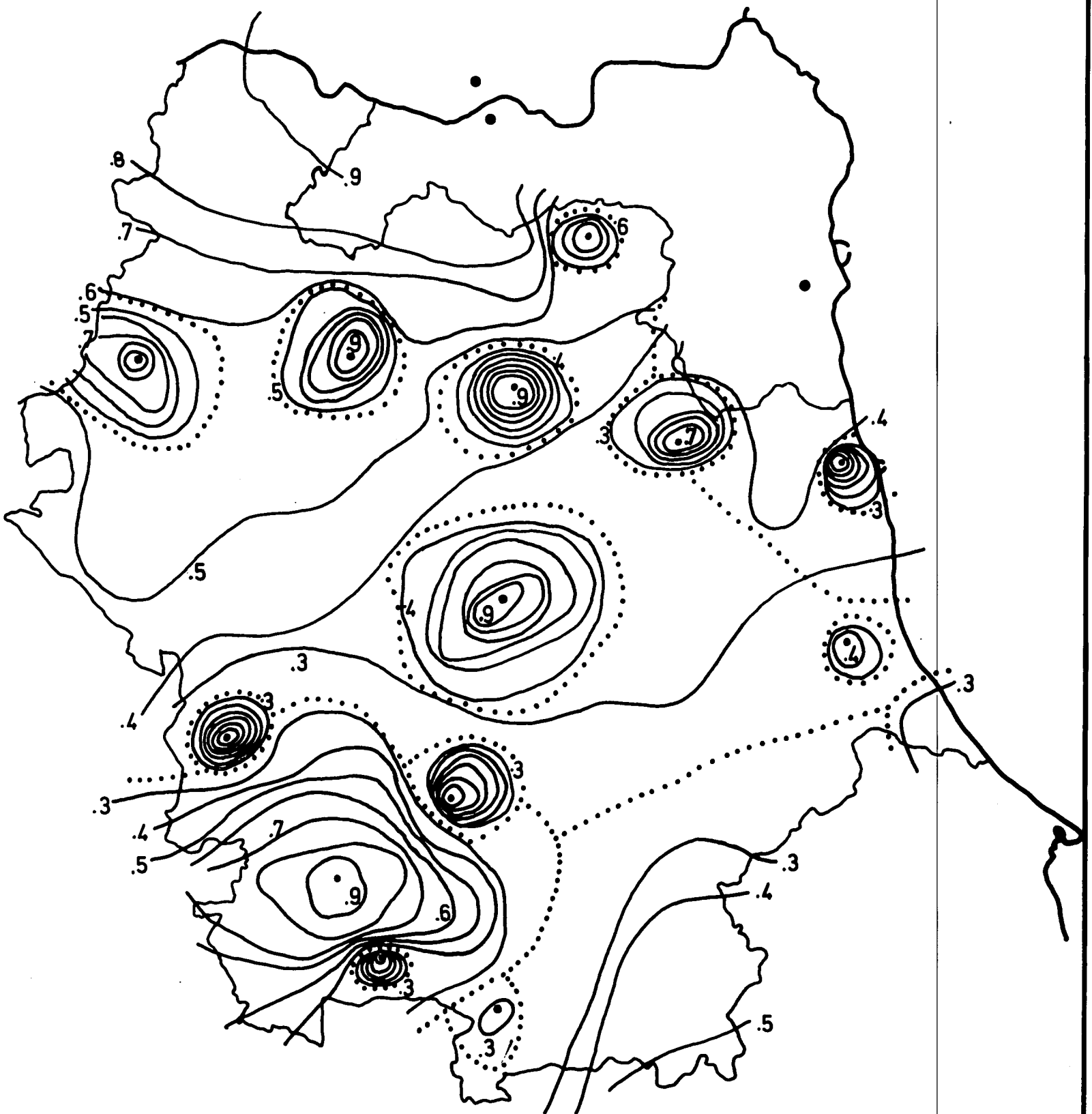
GENERAL INTERACTION PROBABILITY SURFACE.
ONE PARAMETER MODEL. ALL DURABLES.



contour interval .1
..... umland boundary
● centres

5 m.

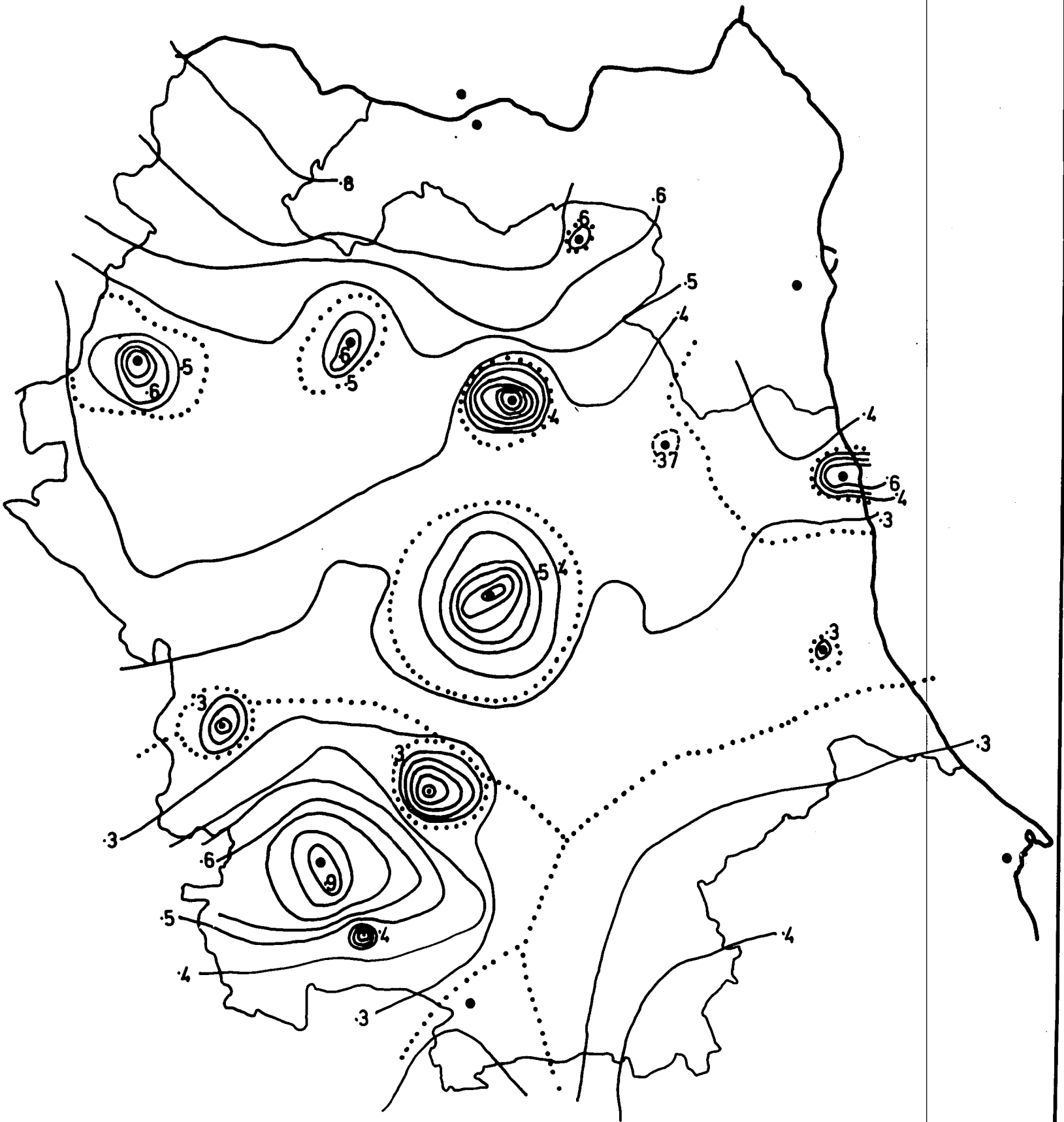
GENERAL INTERACTION PROBABILITY SURFACE.
2 PARAMETER MODEL. ALL DURABLES.



contour interval .1
..... umland boundary
● centres

5 m.

INTERACTION PROBABILITY SURFACE. WOMEN'S CLOTHING PURCHASE.



contour interval .1

.....umland

● centre

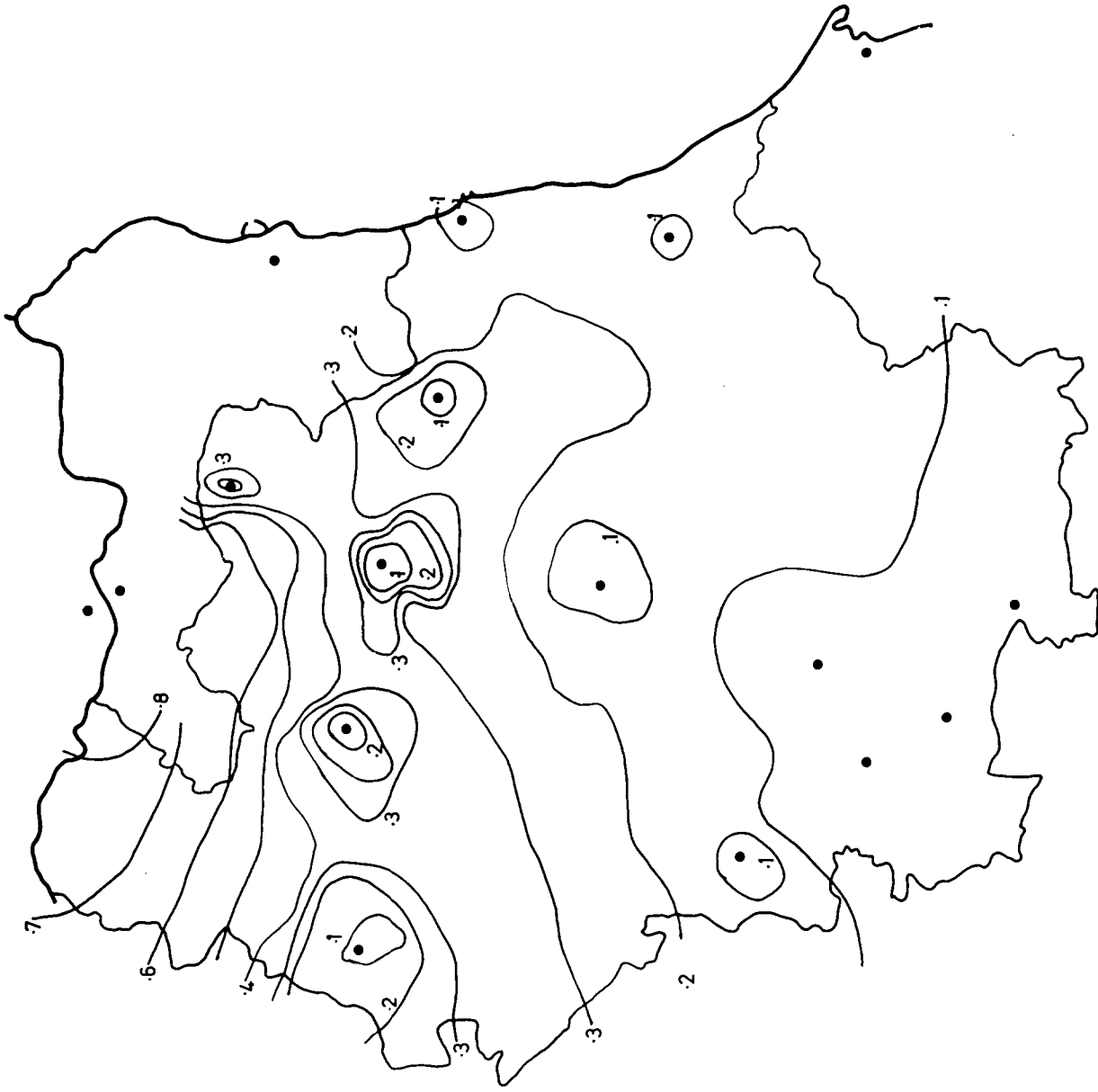
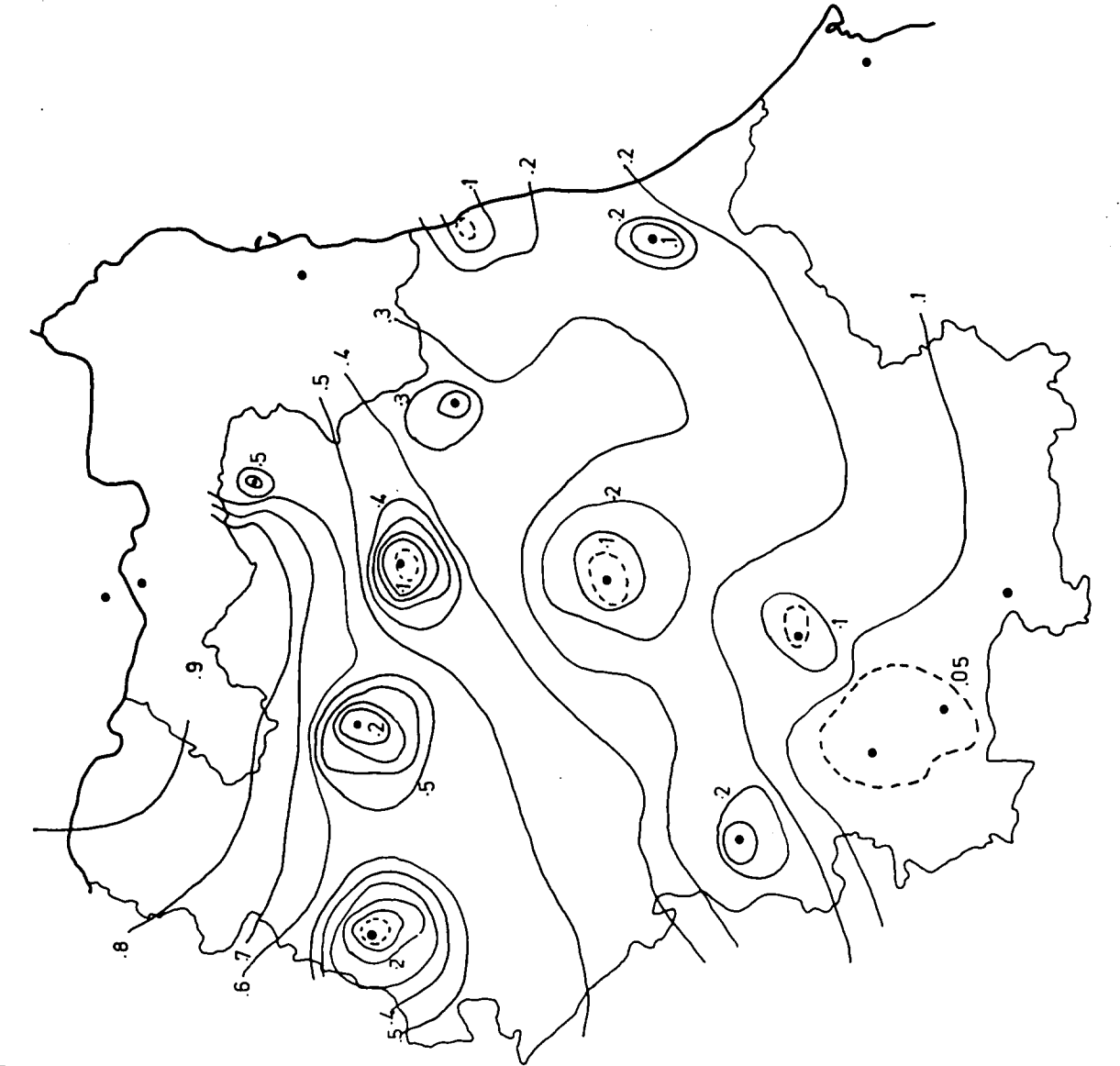
3m.

one parameter

INTERACTION PROBABILITY : 2 SURFACES: NEWCASTLE. ALL DURABLES.

(1) 2 PARAMETERS

(2) 1 PARAMETER

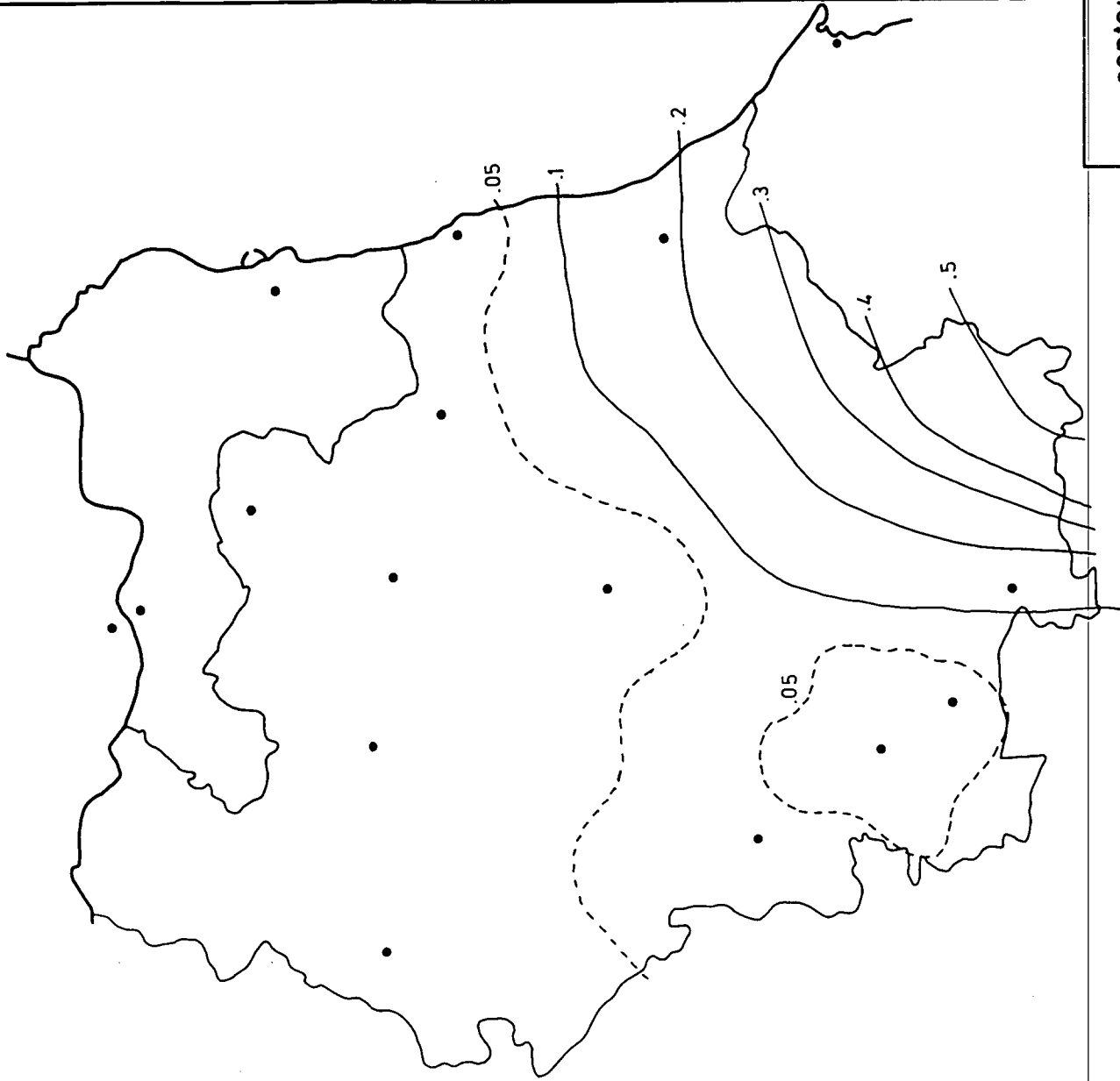


contour interval .1
(excepting .05)
● centres

5m.

INTERACTION PROBABILITY SURFACE: TEESIDE.
ALL DURABLES.

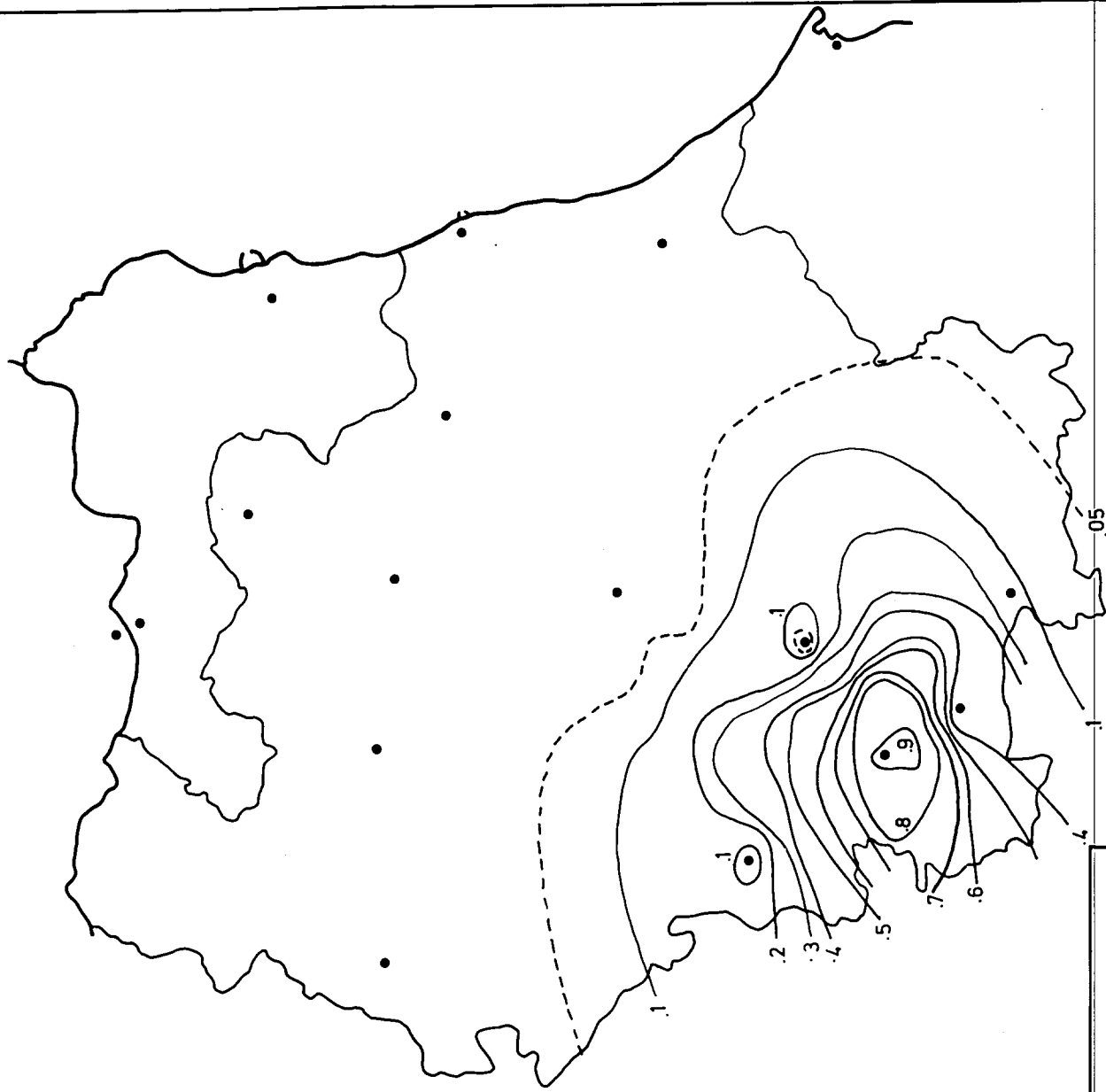
61.



2 param.

INTERACTION PROBABILITY SURFACE: BISHOP AUCKLAND.
ALL DURABLES.

62.



contour interval .1
(excepting .05)

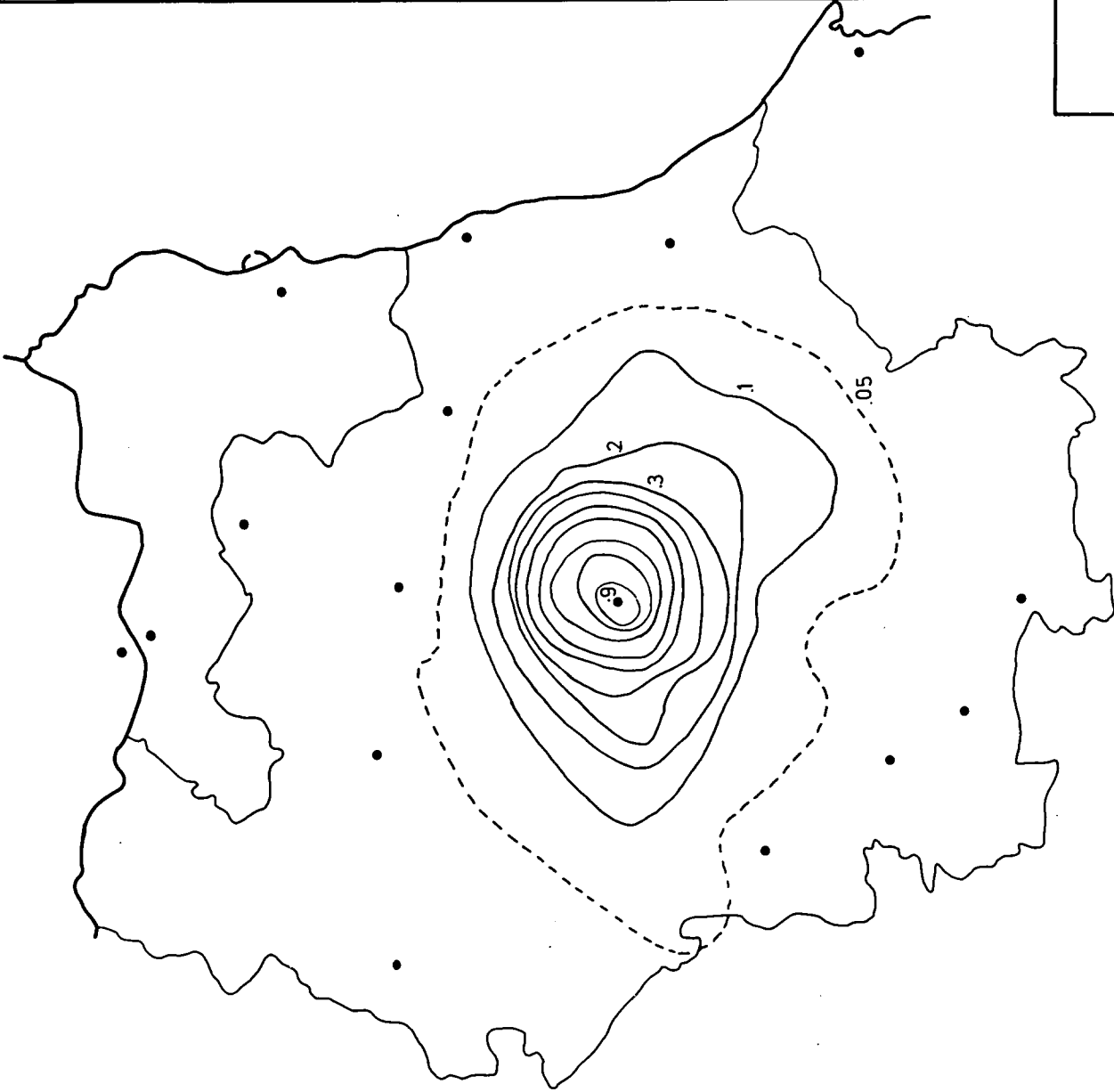
● centres

5 m.

2 param.

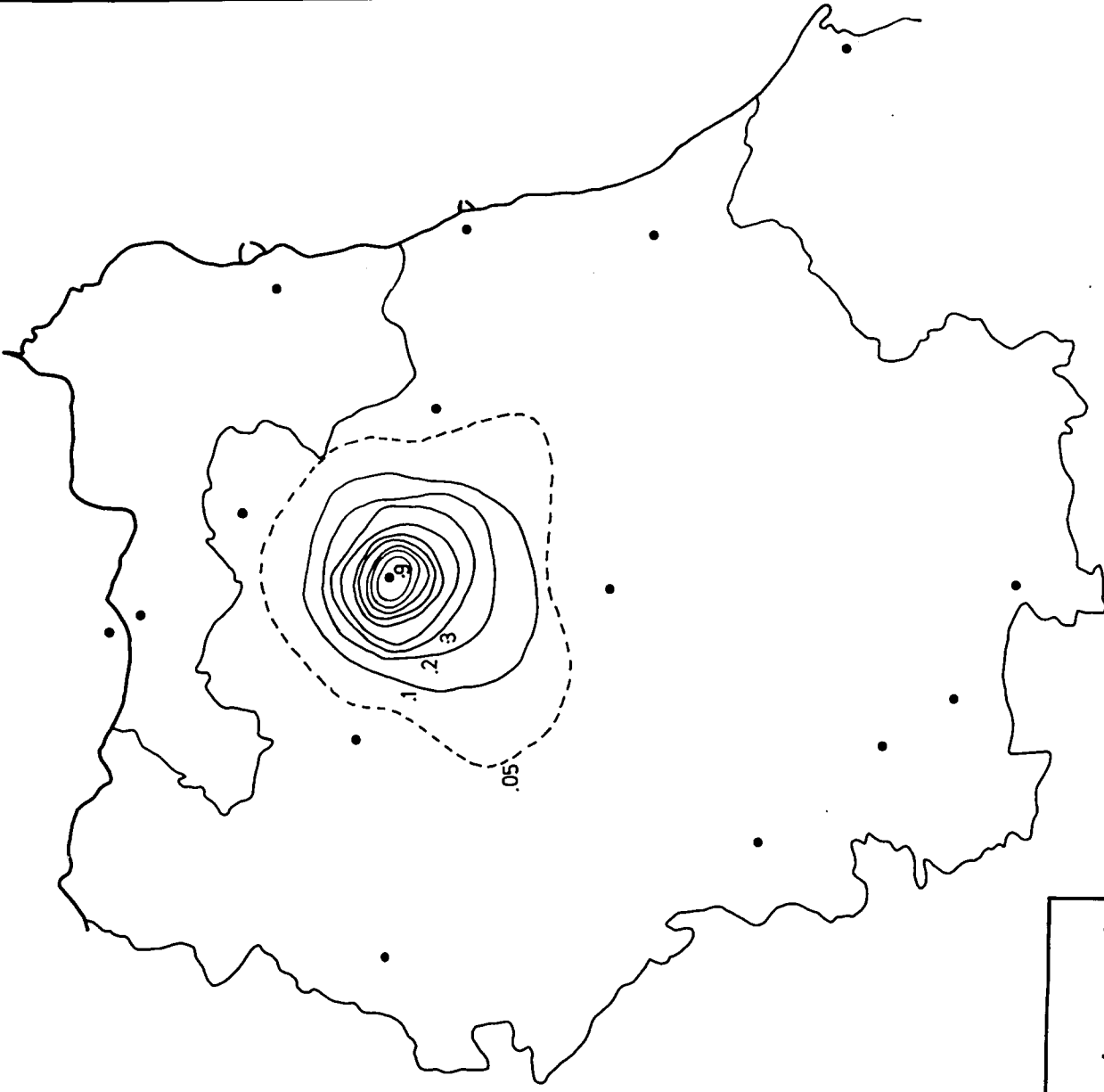
INTERACTION PROBABILITY SURFACE:
ALL DURABLES.

63.



INTERACTION PROBABILITY SURFACE:
CHESTER LE STREET. ALL DURABLES

64.



contour interval .1
(excepting .05)
● centres

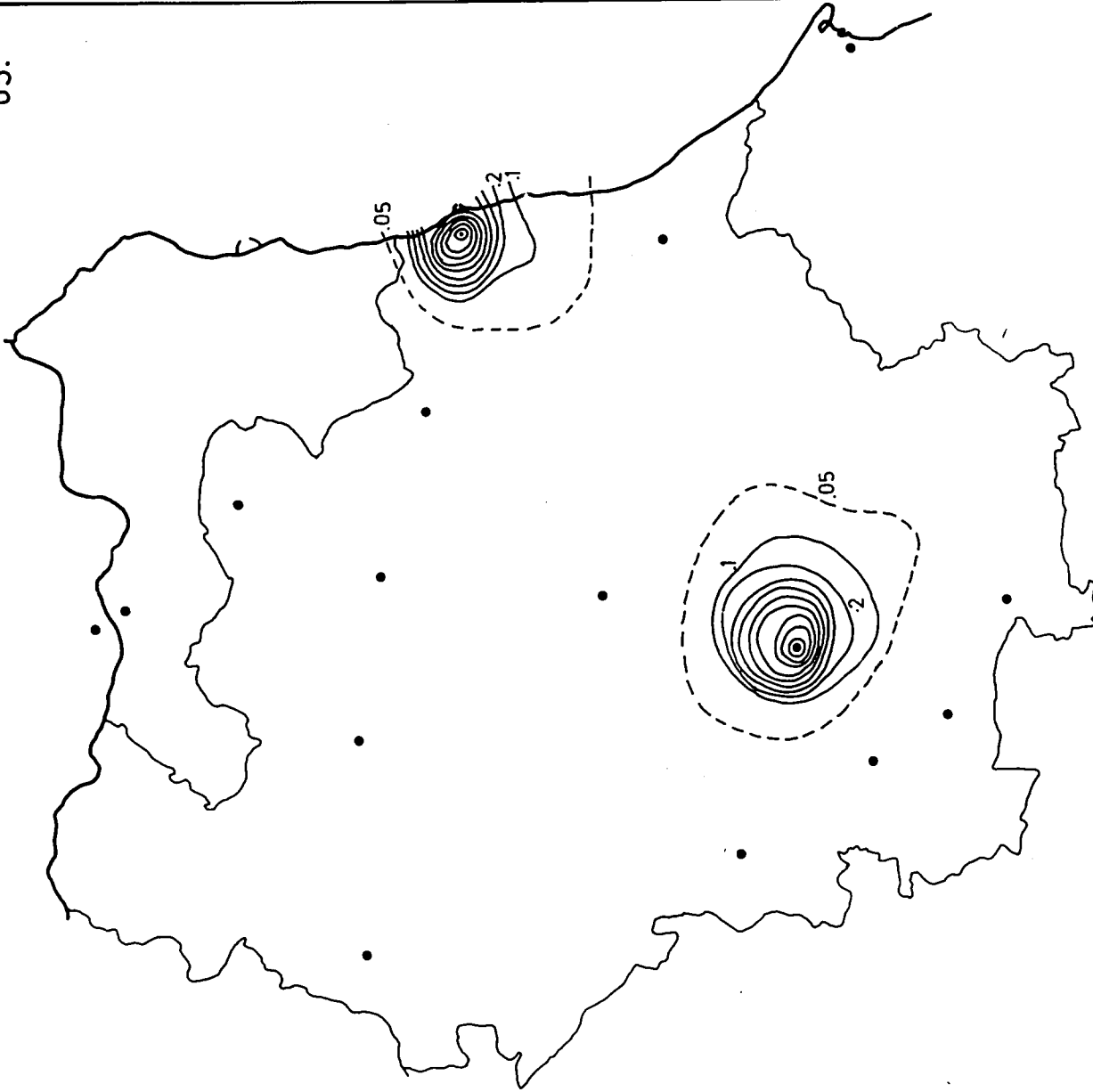
3m.

2 param.

2 param.

INTERACTION PROBABILITY SURFACES: SEAHAM AND SPENNYMOOR. ALL DURABLES.

65.



contour interval: .1
(excepting .05)

● centres

3m.

2 parameters

RESIDUAL COMPETITION: A SURFACE SHOWING INTENSITY OF COMPETITION: WOMEN'S CLOTHING PURCHASE.

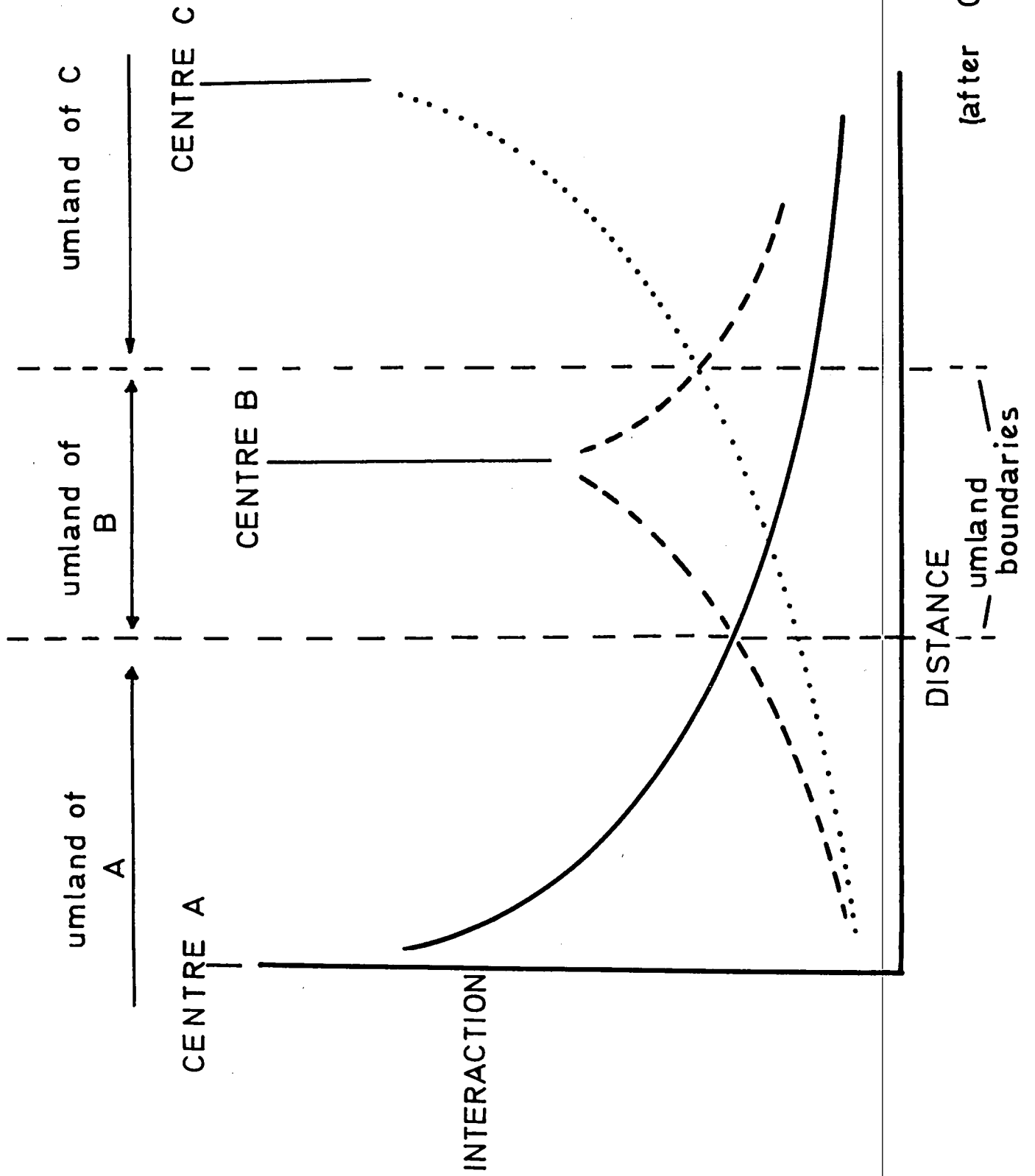
isoline values represent competition intensity

66.



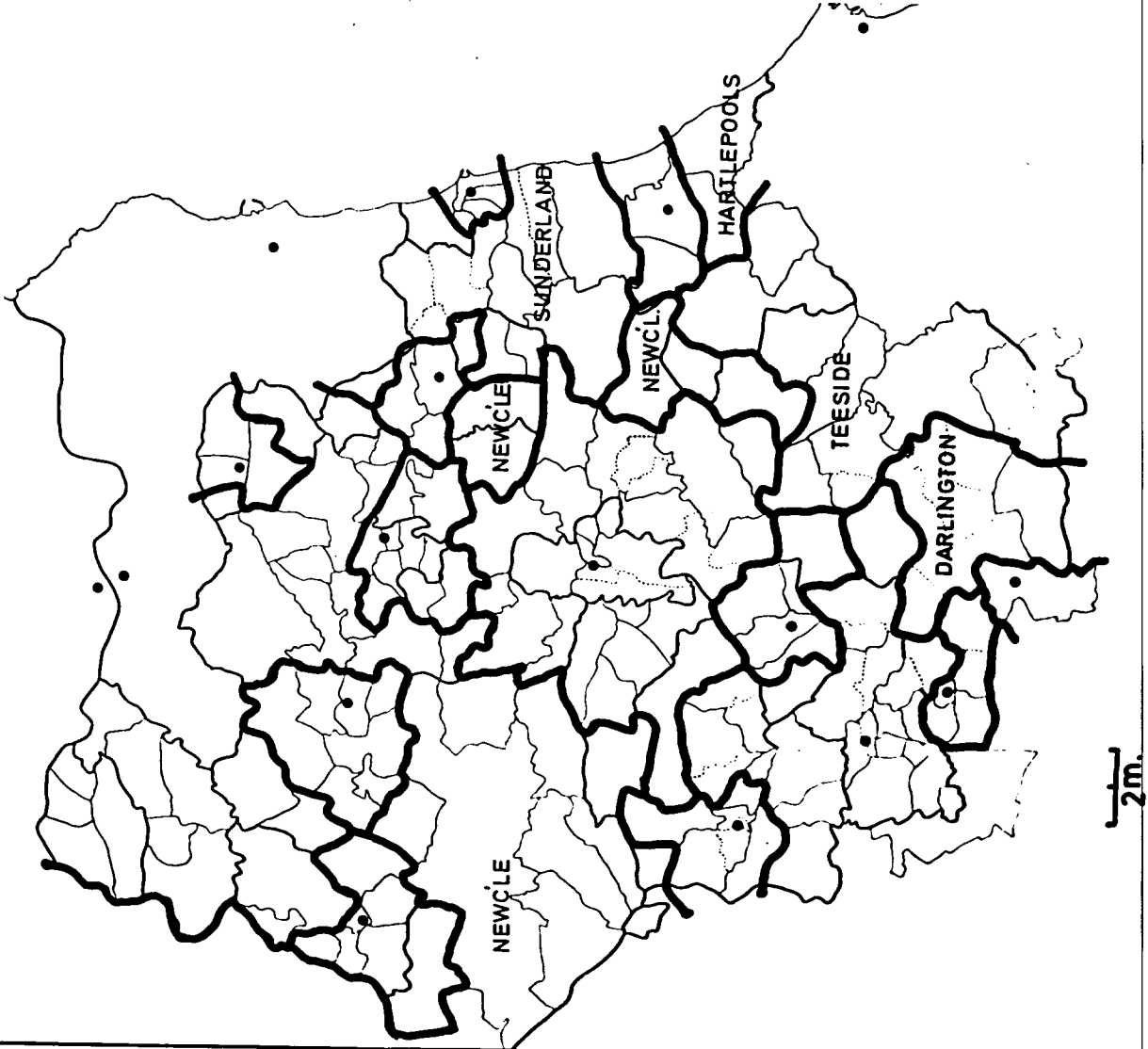
one parameter.

UMLAND: THEORETICAL DEFINITION.

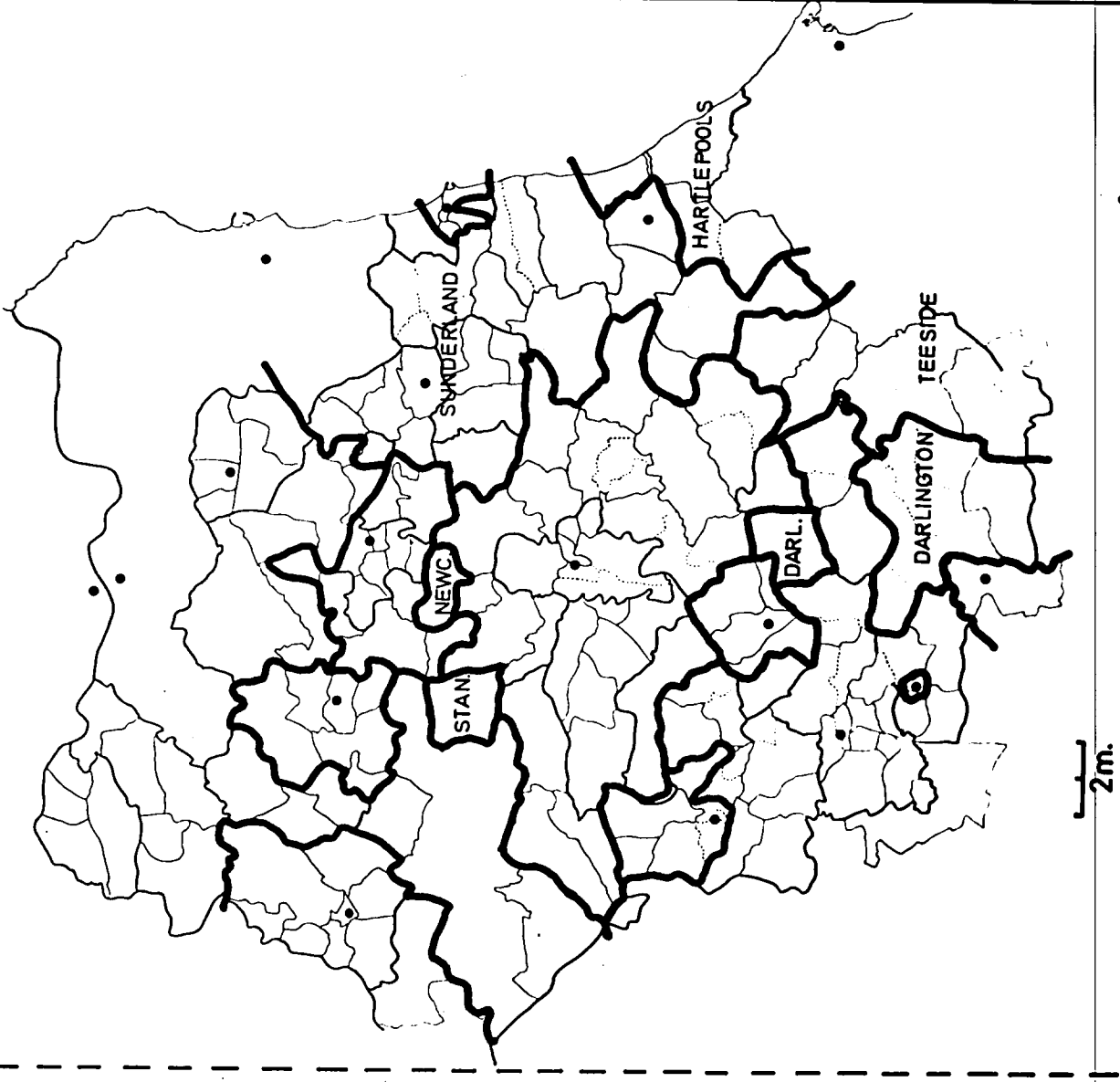


UMLANDS BASED UPON WARDS

THEORETICAL:



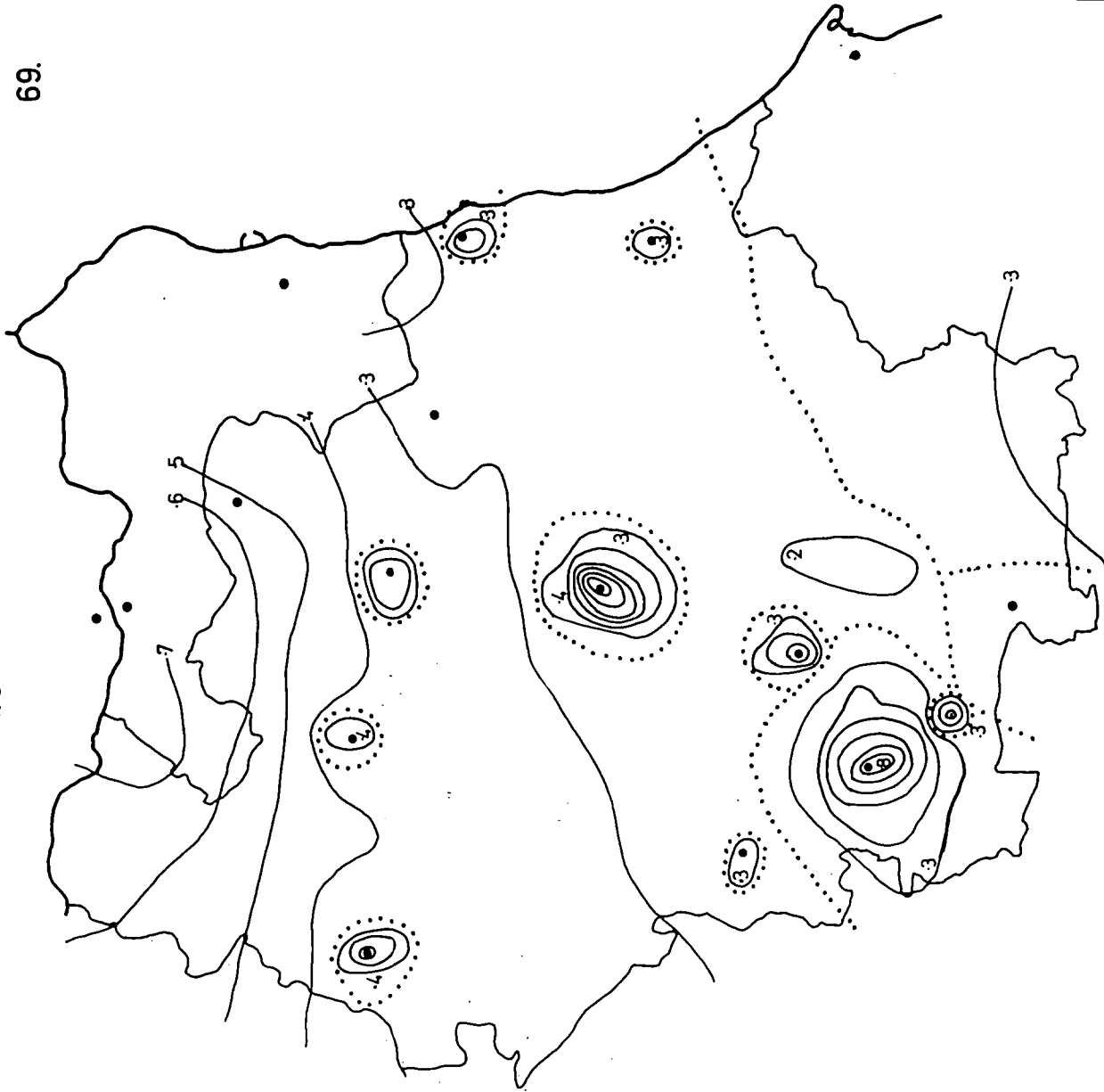
ACTUAL:



— umland boundary
• centre

INTERACTION PROBABILITY SURFACE. ALL DURABLES.
 ONE PARAMETER MODEL: EXPONENT EXPERIMENTALLY
 LOWERED TO 1.3

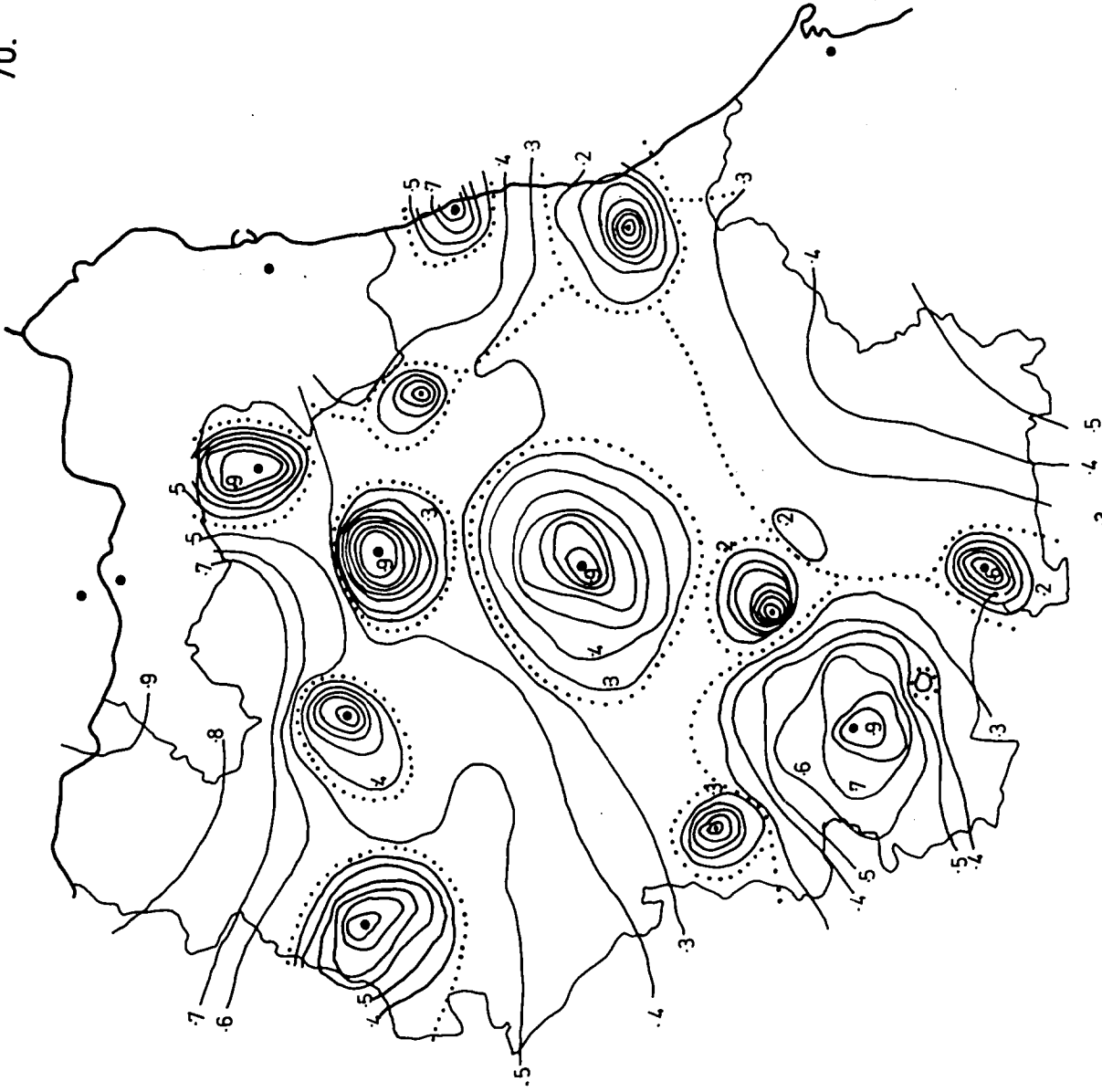
69.



contour interval: .1
 umland boundary
 ● centre
 3m.

INTERACTION PROBABILITY SURFACE:
 PREDICTION 1985.
 ALL DURABLES.

70.



2 parameters.

DISTANCE DECAY: FITTED FUNCTIONS

interaction at increasing miles radius
from strong 'A' centres for the purchase
of men's clothing

