INTRODUCTION 
Environmental overheating of the sow in early pregnancy is known to cause reduced conception rate and an increased mortality of unimplanted embryos. In late pregnancy the effects include an increase in the proportion of piglets born dead and a reduction in birth weight of live born piglets. However, it is generally believed that between about the end of the second week and the beginning of the fourteenth week of gestation hyperthermia has no photophatic or other adverse effects on reproduction in pigs (Wrotchell, 1971). This is in marked contrast to the known teratogenicity of hyperthermia in other species of mammals (Edwards, 1972).

The purpose of the present study was to ascertain the effects of maternal hyperthermia at mid-gestation; and particularly its effects on the central nervous system, which could be particularly vulnerable at a time when a major growth spurt was occurring (Dane, 1976).

METHODS AND RESULTS 
Three pregnant sows were acutely exposed white under sedation (Haverona, Mometamid hydrochloride, Chlorpromazine hydrochloride) to high environmental temperatures (36-60°C) for 1-6 hours, on gestation days 53-65. The sows attempted to maintain thermostasis by hyperventilation and tachycardia; but the results are summarised in Table 1, below.

The sow exposed to the highest environmental temperature for the longest time (A) had a maximum rise in body temperature of 3.4°C, and she aborted within 24 hours after the treatment. The sow exposed to a lower ambient temperature for only 1 hour, and with a maximum hyperthermia of 1.3°C (B), aborted 15 fetuses 9 days later. Skeletal radiography indicated that her piglets had died just before they were aborted, though 5 showed skeletal evidence of impaired development some 2-3 days earlier. The remaining sow (C), which was exposed for 6 hours and which achieved a maximum rise in body temperature of 3.4°C, was delivered by elective caesarean section at term. She contained eight mummified fetuses, which had apparently died shortly after the hyperthermic episode, and 1 live piglet which was situated in the uterine body adjacent to the cervix.

CONCLUSIONS 
Though hyperthermia may be a rare event in sows in mid-gestation, it does nevertheless appear to have adverse effects on reproduction, viz:-

(a) abortion, presumably due to acute maternal failure;
(b) fetal death, with or without abortion; and,
(c) maldevelopment of surviving fetuses, particularly affecting the brain.

ACKNOWLEDGEMENT 
The technical assistance of Dorothy Wells was an essential contribution to this investigation.

SELECTED REFERENCES 


<table>
<thead>
<tr>
<th>SON</th>
<th>EXPOSURE</th>
<th>RISE IN BODY TEMP.</th>
<th>FETUSES</th>
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<td>(Litter ref.)</td>
<td>Gest. Day</td>
<td>Tent Temp.</td>
<td>Duration (hrs)</td>
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<td>A</td>
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<td>B</td>
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<td>60-70</td>
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<td>55</td>
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* = Spontaneous abortion