clear or definitive statement about the biological activity of an auxin-analog could be made.

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CHANGES OF ELECTROPHORETIC ALBUMIN PATTERNS IN GERMINATING SEED OF FIVE DIVERSE PISUM LINES[1]

Jakubek, M. and J. Przybylska Institute of Plant Genetics
Polish Academy of Sciences
Poznan, Poland

An electrophoretic analysis of seed albumins of lines within the genus Pisum revealed five distinct protein patterns which differed in number and in electrophoretic mobility of the major bands (1). Preliminary genetic studies showed that two of these patterns were controlled by two alleles of one locus (2). The albumins corresponding to the characteristic electrophoretic variants seemed to have a molecular weight (MW) of approximately 40,000 and to consist of two subunits of MW approximately 23,000 (3).

Recently, Murray reported that the subunits of MW 23,000 did not disappear during germination of J?, sativum seeds and suggested that these polypeptides could function as structural components (4).

The possible physiological role of the specific albumins was investigated by examining changes in electrophoretic albumin patterns during seed germination of five Pisum lines, each with a distinct banding pattern. Seeds of the following lines from the Weibullsholm collection were investigated: WL 110 (P. sativum): WL 936 (P. humile): WL 1490 (P. cinereum); WL 808 (P. abyssinicum; and WL 1256 (P. fulvum). Seeds were germinated in darkness on moist filter paper. Albumins were extracted from cotyledons at five-day intervals until the 20th day, with 0.15 M acetate buffer, pH 4.6 or with 5% K_2SO_4 in 0.1 M Na-phosphate, pH 7.0 according to Murray (4). Native proteins were submitted to disc-electrophoresis, dissociated proteins to SDS-electrophoresis, as described elsewhere (3).

Extracts obtained both in pH 4.6 and in pH 7.0 gave generally similar electrophoretic spectra. The electrophoretic patterns of the albumins from germinating seeds of the five lines are shown in Fig. 1. In general, the characteristic patterns persisted until the 20th day. Some alterations were observed only in P. abyssinicum and P. cinereum. In P. abyssinicum the characteristic band "f" split into two about the 10th day; in P. cinereum the bands "b" and "d" became faint approximately after the 15th day. The latter observation should be interpreted with caution, because the relative intensities of the bands "c" and "d" in P. cinereum were known to vary depending on uncontrolled

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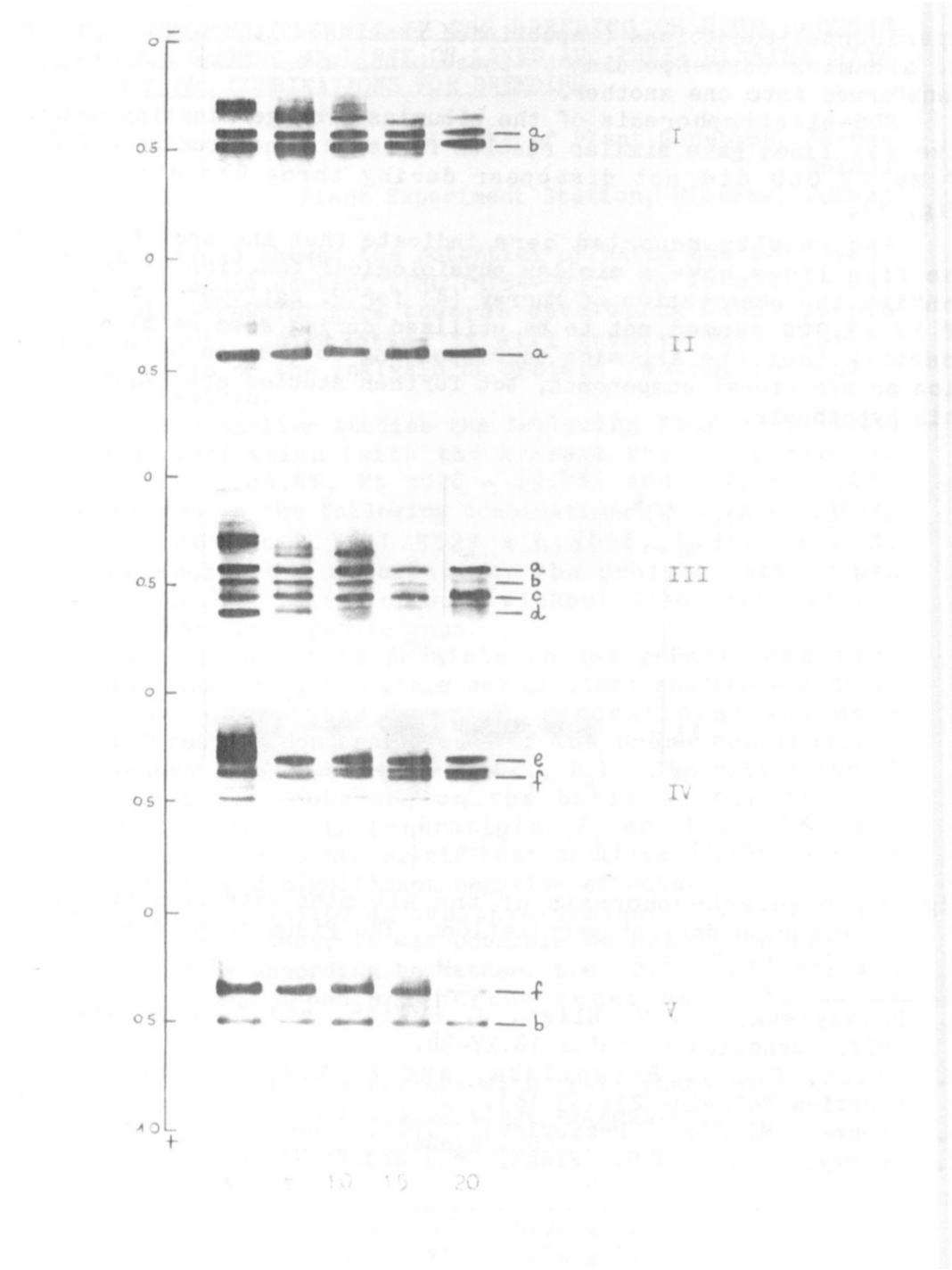
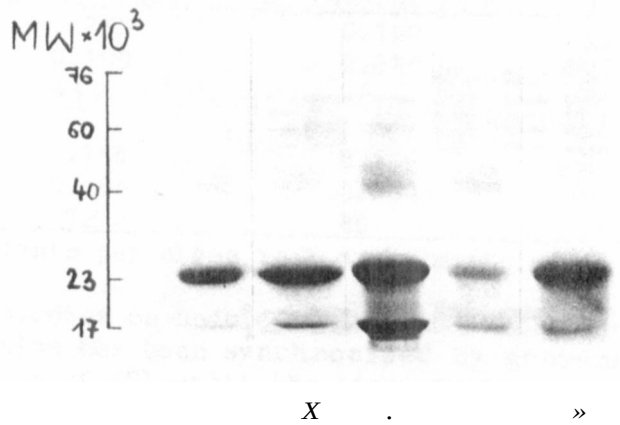


Fig. 1. Gel electrophoresis of the albumins extracted from cotyledons of germinating seeds of five diverse Pisum lines. 0 — starting material (dormant seeds); 5, 10, 15, 20 days of germination, a-f characteristic bands. I W 110 (P. sativum); II——W936 (P. humile): III——W 1490 P. cinereum: IV — W 808 (P. abyssinicum): V — W 1256 (P. fulvum).

experimental conditions (unpublished results). It could be assumed that the albumins corresponding to these bands are labile and can be easily transformed into one another.

SDS-electrophoresis of the albumins from germinating seeds of the five pea lines gave similar results for each line studied. Polypeptide of MW 23,000 did not disappear during three weeks of germination (Fig. 2).

The results reported here indicate that the specific albumins of the five lines have a similar physiological function. These data also confirm the observation of Murray (4) for *P.* sativum: the polypeptides of MW 23,000 seemed not to be utilized during seed germination. It is possible that the albumins corresponding to these subunits could function as structural components, but further studies are required to prove this hypothesis.



X . »

Fig. 2 . SDS-electrophoresis of the albumins extracted from cotyledons after 20 days of germination. The Pisum forms are denoted as in Fig. 1 .

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