The capacity of the adsorbents obtained for fibronectin was determined in the chromatography of fibronectin from human blood plasma under saturation conditions [4]. It was established that the adsorbents with the α-chains and with the α1CB7 peptide possessed a higher capacity (2.0-2.5 mg/mg of immobilized ligand) than a commercial "gelatin–Sepharose" adsorbent (~1 mg/mg) or the sorbents with the β-components (1.0-1.3 mg/mg). The adsorbent with the α1CB8 peptide, which contains no fibronectin-binding section, proved to be ineffective for the isolation of fibronectin. It must be mentioned that the preparations of fibronectin obtained on adsorbents with the α-chains or the α1CB7 peptide were characterized by a higher degree of purity (>95%) than the fibronectin obtained on "gelatin–Sepharose."

The availability of fibronectin for biochemical and medical investigations will promote the further study of the important role of this protein in the norm and in pathological states of the organism [5].

Sorbents with immobilized α-chains or with the α1CB7 peptide are promising for the preparative isolation of fibronectin from various sources. At the Khar'kov Enterprise for the Production of Bacterial Preparations the industrial approval of a method of isolating fibronectin from human blood plasma on adsorbents with the α-chains of collagen, including those based on supports resistant to microbial and enzymatic attack has been completed.

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AMINO ACID COMPOSITIONS OF POLLENS OF SOME HONEY-YIELDING PLANTS. II

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Previously, using paper chromatography, we have described the composition of the free amino acids and those forming components of the proteins of pollens (pollen pellets) gathered by bees from eight species of plants [1].

In the present communication we give the results of an analyses of pollen pellets from Trifolium pratense (red clover), Sinapis arvensis (charlock), Malus domestica Borkh (cultivated apple), Taraxacum officinale Wigg (common dandelion), Ranunculus acer L. (tall buttercup), and Pisum sativum L. (garden pea) gathered by bees on the territory of the Lithuanian SSR.

Amino acids were determined with the aid of a KLA-3V automatic analyzer (Hitachi) using ion-exchange chromatography [2]. The proteins of the pollen loads were subjected to acid hydrolysis with 6 N HCl in sealed tubes at 105°C for 24 h. To analyze amino acids of basic character we used resin No. 2611, and for acidic and neutral representatives resin No. 2612 (Japan).

In the samples investigated 15 amino acids were detected. The figures given in Table 1 show that glutamic and aspartic acids predominated, and these were followed by leucine and then the amino acids alanine, serine, glycine, threonine, valine, isoleucine, proline, and

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TABLE 1. Amounts of Amino Acids in Flower Pollens (pollen loads), mg/g

Amino acid	Red clover	Charlock	Cultivated apple	Common dandelion	Tall buttercup	Garden pea
Glutamic	34,72±1,20	37,70±1,35	36,77±1,40	21,04±1,01	23,58±1,15	39,01±1,50
Aspartic	27,52±1,18	31,18±1,21	27,21±1,11	16,57±0,95	18,12±1,01	35,85±1,30
Leucine	22,28±1,02	22,82±1,02	23,30±1,10	14,93±0,86	15,19±0,53	22,89±1,03
Alanine	15,94±0,83	17,84±0,82	17,83±0,79	12,96±0,67	11,19±0,52	16,05±0,90
Serine	14,09±0,80	13,08±0,69	15,26±0,85	10,08±0,51	9,91±0,45	18,31±0,81
Glycine	13,31±0,71	16,22±0,92	14,25±0,81	12,16±0,61	10,01±0,50	13,56±0,73
Threonine	14,16±0,81	17,37±0,75	13,94±0,74	8,34±0,32	9,74±0,42	14,48±0,84
Valine	13,83±0,76	13,35±0,73	13,97±0,78	8,37±0,32	9,32±0,41	15,64±0,85
Isoleucine	13,52±0,73	12,92±0,52	13,13±0,71	8,48±0,35	9,01±0,40	14,67±0,84
Proline	13,05±0,70	14,63±0,84	12,55±0,63	10,35±0,53	7,98±0,24	12,74±0,65
Phenylalanine	12,77±0,62	14,23±0,71	12,82±0,52	7,91±0,26	8,71±0,36	13,45±0,74
Tyrosine	7,86±0,25	8,18±0,31	8,67±0,35	4,77±0,16	4,91±0,16	8,14±0,31
Lysine	6,29±0,18	5,19±0,17	5,51±0,17	3,89±0,15	3,32±0,13	4,92±0,16
Histidine	6,21±0,18	3,28±0,13	6,66±0,18	3,19±0,13	2,80±0,12	6,00±0,17
Arginine	4,86±0,16	0,97±0,05	2,27±0,12	2,30±0,10	0,88±0,04	8,05±0,30

phenylalanine, and, after them, tyrosine, lysine, and histidine. Arginine was present in the smallest amount, with the exception of the pea pollen, which contained 8.05 mg/g of it.

The results obtained show the uniformity of the qualitative compositions of the amino acids. The variations in their amounts in the pollen loads from various species were inconsiderable, which is apparently due to the vital needs of the plants.

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ISOLATION AND CHARACTERIZATION OF A ZEIN POLYPEPTIDE

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The elucidation of the nature of the components responsible for the polymorphism of zein is of interest for the identification of self-pollinated lines of maize [1] and for establishing the interrelationship of the biosynthesis of the zein polypeptides [2]. We used gel filtration [3] and preparative electrophoresis [1, 2, 4] to isolate the zein subfractions. There is information on the isolation of the subfractions of zein by preparative isoelectric focusing using sorbitol [5, 6] or Ultrodex [7] with the aim of a comparative investigation of their amino acid compositions. However, these results do not permit an adequate characterization of the nature of the components of zein.

In the present paper we discuss the isolation of a zein polypeptide by preparative isoelectric focusing in Ultrodex.

A total zein preparation was isolated by extraction with 70% ethanol from maize flour (line A 204 +++) that had been defatted with petroleum ether. For the separation of the protein preparation we used dialysis, centrifugation, and freeze-drying. Isoelectric focusing was performed in Ultrodex on a 12 × 26 cm horizontal plate in a Multiphore instrument (Sweden) in the pH range of 5-9 by a modified procedure [7]. The amount of protein deposited was 200 mg. Focusing was carried out for 16 h at a power of the electric

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